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MAY 8 1922

AMERICAN ARTISAN and Hardware Record

Vol. 83. No. 18.

620 SOUTH MICHIGAN AVENUE, CHICAGO, MAY 6, 1922.

\$2.00 Per Year.

Plecker's Galvanized Corrugated Conductor Pipe and Eaves Trough



When you put them up you can tell your customers that they are there to stay for a long time—that Plecker's will give many years of good service, because, this exceptionally durable metal is less affected by weather conditions than others.

Made of Keystone Copper Bearing Steel

They resist rust and corrosion. And the big point to you—they cost little more than the ordinary kind.

Our goods will give satisfaction to you and your customers—why not get this for your next job?

Send Your Order Now

Clark - Smith Hardware Company
Peoria, Illinois

The **WEIR**

Steel Gas and Soot Consuming **FURNACE**

Make a note now
—examine it at
the Weir booth.

National Convention

at Indianapolis

May 16th to 19th

You'll find a
representative on
hand to answer
your questions.

The **MEYER FURNACE CO.**
PEORIA, ILLINOIS



This Is a Garland Year

Wherever you go, in cities and towns all over America, you will find the Garland dealer radiating optimism.

He will tell you that his business is good; that his profits are, to say the least, satisfactory.

For this year's sales are to date the greatest in Garland's history. People are now buying *known* values—in other words—Garlands.

Garland dealers are enjoying a greater sales volume than ever before, because the Garland name stands clearly in the public mind for better stoves and furnaces.

We will be glad to hear from you regarding the Garland dealer franchise in your community.

The Michigan Stove Company
Detroit, Michigan

GARLAND
Heating and Cooking

World's Largest Makers of Stoves and Furnaces

Founded 1880 by Daniel Stern

Thoroughly Covers
the Hardware, Stove,
Sheet Metal, and
Warm Air Heating and
Ventilating Interests

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Vol. 83. No. 18.

CHICAGO, MAY 6, 1922.

\$2.00 Per Year

WHAT WILL YOU SELL IN 1922?

Your sales for 1922 should be considerably larger than they were in 1921.

More people are employed.

Wages are high compared with living costs.

The farmer is receiving higher prices for what he produces.

He does not feel "broke," as he did in 1921.

He has some money to spend this Spring.

He will have some during the Summer.

And unless all signs fail, he will have more after the harvest.

All of which means that the hardware merchant who is really on the job and "on to his job" will have an ever-growing source from which to draw sales this year.

But keep this in mind—

For nearly two years, the farmer and the mechanic and the laborer, and the clerical employee—all of them have been on short rations and have gotten into the habit of doing without things, because they did not have the money with which to buy those things which they would like to own and use.

It is not as natural for them now to buy just because they see an article in the show window as it was in 1918, 1919 and early in 1920.

Something more definite in the way of suggestion is needed.

That is why the consistent user of advertising is reaping greater returns on his merchandise investment than the non-advertiser.

He makes more sales. He turns his stock more frequently. His business is larger. His profits are greater.

If you have not been a consistent advertiser—now is the very best time to get started.

In Memoriam



Daniel Stern,

Founder of

American Artisan and Hardware Record

May 4, 1920

May 4, 1922

Random Notes and Sketches.

By Sidney Arnold

RALPH W. BLANCHARD, manager Chicago office of Hart & Cooley Company, believes that the sheet metal contractor should be paid for everything he does in the practice of his craft. He offers the following example for guidance:

"I cracked a lawyer's house the other night," said the first burglar disgustedly, "and the lawyer was right there with a gat all ready for me. He advised me to get out."

"You got off easy," commented his pal.

"Easy nothing!" exploded the other: "He charged me twenty-five bucks for the advice."

* * *

Irving S. Kemp, Sales Manager for Vaughan & Bushnell Manufacturing Company, has been a man without a home for several weeks. He sold his residence in River Forest, western suburb of Oak Park, bought another one, but the occupant would not move until May second, so Irving and his family have been camping out with father-in-law Beegle.

One day Irving was telling of his troubles in the Hardware Club at the Mixers' Table, when one of the visitors said:

"What are you kicking about—that family of yours—two youngsters and a wife—and no place to live? You are barking up the wrong tree. You ought to consider yourself lucky. Look at the exemption you can claim on your income tax return. More than two thousand dollars that Uncle Sam can't tax you on. I'd stand a lot of discomforts for that."

* * *

The perils of slang are vividly depicted in this clipping sent me by George Beaudin, Chicago manager of J. Wiss & Sons Company:

Little Spencer let no grass grow under his feet, when uncle came for a visit, before rushing up with this:

"Uncle, make a noise like a frog."

"Why?" asked the old man.

"'Cause when I ask daddy for anything he says: 'Wait till your uncle croaks.'"

* * *

It is amazing how often words are misunderstood, says Frank E. Ederle of Grand Rapids, secretary, Michigan Sheet Metal Contractors' Association. He relates a typical case, as follows:

A well known comedian was sitting in his drawing room when his servant entered and said:

"If you please, sir, there's a man at the front door and he wants to know if you could give him a pass for his wife and six children to see the performance, as he's out of work."

"Who is the man?"

"Don't know, sir."

"He must be a madman," exclaimed the comedian. "Has he got his faculties about him?"

"I—I—I think so, sir," stammered the maid. "He's got something tied up in a red handkerchief."

* * *

As yet there is no ruling from the authorities at Washington forbidding us to repeat such stories as the following, told by Bennett Chapple, advertising manager, American Rolling Mill Company, Middletown, Ohio:

The tourist from the East had stopped to change tires in a desolate region of the far South.

"I suppose," he remarked to a native onlooker, "that even in these isolated parts the bare necessities of life have risen tremendously in price."

"Y'er right, stranger," replied the native, gloomily, "an' it ain't worth drinkin' when ye get it."

* * *

The spirit of Indianapolis vitalizes everyone who visits that city, declares J. R. Strahlendorf of the Peerless Foundry Company, Indi-

anapolis, Indiana. He gives an illustration of the fact, thus:

A Chinaman who had recently arrived in Indianapolis was desirous of starting a laundry, but was at a loss to know what sort of sign to put over his shop.

He, therefore, decided to take a stroll and investigate other signs in order to get an idea.

After walking a while he came to a restaurant before which appeared the following: "Never Closed."

A little farther he saw another restaurant with this sign: "24-Hour Service."

Walking still further he came to one reading: "Meals Served Day and Night."

Finally he hung up the following: "Me No Sleep, Too."

* * *

Samuel D. Latty of Kirk-Latty Manufacturing Company, Cleveland, Ohio, sends me the following proof of the wholesome climate of his part of Ohio:

"Did you know," asked a proud resident of Cleveland, "that this is a wonderful health resort?"

"Why, no," replied the traveler. "I hadn't heard about it."

"Fact. When I came to this city I couldn't walk and had to be carried from my bed."

"Remarkable! Remarkable! May I ask how long you have been here?"

"Oh," said the citizen, preparing to go home, "I was born here."

* * *

Damn the Secretary.

If your Club is on the bum,
Damn the Secretary.
If your members will not come,
Damn the Secretary.
Don't take hold and do your part,
Don't help give the thing a start,
Show 'em all that you are smart.
Damn the Secretary.

If the programs are a frost,
Damn the Secretary.
Don't help put the thing across,
Damn the Secretary.
If the grub's not what you like,
Threaten to go on a strike,
Don't help, for the love of Mike,
Damn the Secretary.

When you get a bill for dues,
Damn the Secretary.
When you're asked to help, refuse,
Damn the Secretary.
Let him do it, he gets paid,
Why should he be seeking aid?
That is why his job is made.
Damn the Secretary.

The Latest News About Stoves and Ranges

Items and Discussions of Interest to the Manufacturer and Retailer of Kitchen Ranges, Heating Stoves and Accessories.

Says Stove Business Is Good.

The American Range & Foundry Company, Minneapolis, Minnesota, reports that it will close the first quarter of 1922 with the greatest volume of business in its history or in the history of its predecessor, the Minnesota Stove Company.

"During the first three months of this year our firm has manufac-

tured and shipped more ranges than in any previous quarter in its existence of 31 years, not excepting 1920," says C. W. Nye, treasurer of the company.

"Because of lower prices, however, the volume in dollars and cents is slightly less than in 1920. Prices average about 30 per cent lower than the peak of prices of that year."

adjusted promptly, and always satisfactory to the customer. Good recommendations from satisfied customers will always bring new sales.

"By following these principles, we have established a very nice stove business."

There is nothing mysterious or difficult in the Wiechmann method of building up a lucrative stove business.

Any dealer who is ambitious to increase his trade can adapt it to his requirements with results at least as satisfactory as those which have followed its use by Mr. Wiechmann.

The main thing about reading such accounts of successful stove selling as that which you are now reading is to get all the good you can out of them for yourself.

Ask yourself, "How can I apply these methods to my business?"

How do you handle complaints?

Do you use patience, courtesy, and a smiling willingness to help your customer get satisfactory adjustment of the trouble?

These and scores of other questions suggest ways to improve your stove trade.

Louis Wiechmann Believes in Learning All He Can About One Make of Range.

Wisconsin Hardware Merchant Carries Several Lines in Stock, But Specializes on One.

"THE more you know about any article in your stock, the easier it is for you to sell that article," says Louis Wiechmann, hardware merchant of Wausau, Wisconsin.

Incidentally, Louis sells sewing machines, washing machines, farm implements, fence wire, cream separators, paints, general hardware—and stoves and ranges.

All of these lines, with the possible exception of "general hardware," require special treatment and special selling effort in order to build up a business which "amounts to something," and Louis has the reputation of selling quite a few of these special lines.

His letter head, by the way, mentions three well advertised lines, one of which is the Quick Meal Range, and evidently he thinks quite well of that make, judging from the following statement:

"We find from experience that it is impossible for any dealer to build up a very large range business by handling one line exclusively. He must have at least two or three different lines on display, but have one line that he makes his specialty, and must buy them in fair quanti-

ties to have a good stock at all times.

"We have chosen the Quick Meal Stove Company's line as our main line, and we make this range our study, and memorize many of the exclusive points which this range has, and are able to convince our customers of them.

"Ranges should be nicely displayed, and kept clean and bright.

"Ranges should not be used as counters, or to display other goods on them.

"Good advertisements with cuts of ranges in local newspapers must appear regularly.

"When having a prospective customer, it is important to mention as many as possible of the good points of the lower priced ranges, but a good salesman will always try to complete the sale of the better range if possible.

"When a customer has decided upon the style of range, it is good policy to recommend the size suitable for the requirement. A large 9-20 range for a small family of two or three people would not be so satisfactory as a smaller size.

"All complaints, such as fire cracks or other trouble, should be

Stove Conventions Meet in New York Week of May 8th.

For the discussion of matters pertaining to the welfare of the industry, two conventions of stove manufacturers are to be held in New York City the week of May 8th.

Tuesday, May 9th, the Stove Founders' National Defense Association will meet in Hotel Astor of that city.

The other convention is the annual meeting of the National Association of Stove Manufacturers.

This will also be held in Hotel Astor. The dates of its sessions are May 10th and 11th.

Use Kitchen Utensils to Help Your Display of Ranges.

When you make a window display of kitchen utensils, take advantage of the fact to introduce a kitchen range.

You will find that a display of kitchen utensils is always more persuasive when it is shown in connection with a kitchen range, for the reason that the latter suggests more distinctly the uses of the utensils.

The introduction of the kitchen range helps you sell the kitchen utensils, and the latter, in turn, exercise influence in drawing attention to the range itself and, therefore, help you in making sales of kitchen ranges.

This is another example of the power of association of ideas in merchandising.

That's the way our minds work.

We see one thing and it reminds us of something similar.

Give a boy a pound of nails, a hammer, and some pieces of wood, and he will proceed to use his hammer and the wood and the nails to make something—unless he is a boy in name only and a startling exception to the general run of boys.

You can always depend, therefore, upon getting results from association of ideas in window advertising.

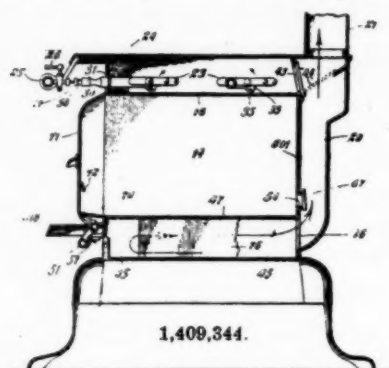
Your exhibit of kitchen ranges will be more effective, therefore, if you put in a sufficiency of related commodities to strengthen the suggestiveness of its appeal.

Patent Rights Are Granted for Combination Range.

United States patent rights have been secured by Edward Kener, Jr., Buffalo, New York, under number 1,409,344, for a combination ranged herewith described:

A combination range comprising a heating compartment provided with a door, an outer oven shelf arranged in front of said heating compartment, an oven burner recessed in the upper face of said outer oven shelf, a flame spreading

plate engaging with said shelf and extending rearwardly over said oven burner, and a covering door



pivoted to the oven door and adapted to cover said recessed oven burner when the flame spreader plate has been removed.

Teach the People What You Know About Stoves.

The poorest and slowest way to sell stoves is to hide them away from the public and let nobody know that you have them in stock.

If you are desirous of leading a quiet life and you do not want to be disturbed by customers trespassing upon your leisure, don't tell the people anything about the stoves that you have in your store.

Incidentally, it would be a good idea for you to get acquainted with the sheriff or his deputies in your district, so that when they come to sell you out for the benefit of your creditors, you will not be distressed by dealing with strangers who have no regard for your feelings.

The sheriff or his deputy, whose acquaintance you will have made, will treat you in a friendly manner and, no doubt, drink a beaker of grape juice with you in celebration of your retirement from the retail trade.

However, on condition that you really want to stay in business and derive a comfortable income from your store, it will be necessary for you to practice all the devices of salesmanship every day that you are in business.

In other words, you will have to inform the people about your goods and your willingness and ability to serve all their needs insofar as your stock of commodities is concerned.

This implies your handling stoves of proved reputation, which will give thorough satisfaction.

In turn, it will be necessary for you to study all the advantages of the particular brand of stoves and ranges which you are selling.

A successful seller is also a successful teacher.

You must teach the people knowledge of the stoves and ranges which you are merchandising.

Now, since you can not gather them into classes in your store at stated hours for the purpose of giving the lessons, you must find some other way to reach them in groups corresponding in effect to such classes.

The advertisement in your local newspaper, the explanatory booklets and the illustrated circulars supplied by the manufacturers and sent to the people on your mailing list constitute the means for presenting this knowledge to selected groups of prospective customers.

Then it becomes an easy matter to persuade them to enter your store for the final explanation and selling, which means profit to you.

Keep Careful Control of Your Credit Accounts.

No one can successfully deny that the granting of credit increases the dealer's cost of transacting business.

Therefore, credit accounts should be handled with the utmost care and scrutiny.

The customers should be made to understand that the granting of credit is a favor—not a right.

Consequently, the dealer should make the conditions, not the customer.

In the past it has almost invariably been the customer who dictated the terms.

Not one but hundreds of dealers today are out hundreds, very often thousands, of dollars because they were "easy."

Irregular work makes irregular workers and irregular workers make irregular citizens.

Events and Progress of the Hardware Trade.

What the Retailers, Jobbers and Manufacturers Are Doing.
Latest Selling Methods and Experiences of Successful Men.

Business Is Distinctly on the Upward Trend.

Business is distinctly on the upward trend, according to reports received by the National Association of Credit Men from 88 representative concerns in 10 different lines of business in Eastern, Middle Western and Southern states.

Of these concerns 78 per cent report sales in dollars for March, 1922, better than for February of this year and 55 per cent report their sales in dollars better for March of 1922 as compared with March, 1921.

Collections for March, 1922, compared with February, 1922, also show an improvement, 59 per cent reporting improved collections.

As compared with March, 1921, however, collections have fallen off slightly; only 46 per cent report better collections in March, 1922, as compared with the same month of the preceding year.

In answer to the question, "Has the revival of business activity reached your line?" 67 per cent answered "yes" as against 33 per cent who answered "no."

The complete summary of all the trades is as follows:

SUMMARY.

1. Comparing their figures with February, 1922, 59 per cent report collections for March better, 34 per cent stationary and 7 per cent worse.

2. Comparing sales in dollars for March, 1922, with those for February, 1922, 78 per cent report better sales, 13 per cent stationary and 9 per cent worse.

3. Comparing sales in units for March, 1922, with those for February, 1922, 76 per cent report improvement, 15 per cent stationary sales, 9 per cent worse.

4. Comparing their figures with March of last year, 46 per cent re-

port better collections for March, 1922, 18 per cent stationary collections, and 36 per cent worse.

5. Comparing the figures with those of March, 1921, 55 per cent report sales in dollars better for March, 1922, 11 per cent stationary, and 33 per cent worse.

6. Comparing the figures with those for March, 1921, 65 per cent report sales in units better for March, 1922, 8 per cent stationary, and 27 per cent worse.

All lines report better business in March, 1922, as compared with February, 1922. February, however, is a short business month.

With the exception of the Iron and Steel group, which shows decidedly better business for March, 1922, as compared with both February, 1922, and March, 1921, business in March, 1922, although gen-

erally better than in March, 1921, is not uniformly so.

Drugs and chemicals, paints and varnish, dry goods and notions, and paper show up well in a comparison of March, 1922, figures with March, 1921, figures.

The other groups show at the most only a slight improvement.

On the basis of these reports it would seem that the improvement in business as a whole is due to the increased activity of the construction industry, which comprehends not only building in its narrower sense but construction of railroad equipment as well.

The activity should gradually be communicated to other groups and should go far to offset the downward pull that comes from the inability of the farmer to buy in his usual quantities.

Chandler Presents Right Sort of Argument for Aggressive Selling.

Boston Hardware Merchant Tells Why It Is Poor Policy to Wait for Lower Prices.

F. ALEXANDER CHANDLER, the progressive hardware merchant in Boston, presents in the following some excellent ideas for the salesman who is uncertain as to how they can overcome the disinclination of some people to buy because they believe that prices may be lower, and incidentally, he suggests many uses to which a set of screw plates can be put by the prospective purchaser.

Here is what Mr. Chandler has to say:

"Why shouldn't I wait until prices are lower?"

"That question has stood between many a man and a sale, recently.

"It must be answered before the sale can be made.

"It must be answered honestly.

"The first question to use in han-

dling this difficulty is 'Can you wait until things are cheaper?'

"A man who has no shoes must buy shoes. He can not wait. A man who has no garage, on the other hand, can wait. He can put his car in someone's else garage, or he can leave it outdoors.

"Having established whether the prospect can or can not wait, then you can move on. If he can not wait the argument is settled. It becomes a question of, 'Which of several articles shall I buy?'

"But supposing that it develops that he can wait. Then the next question in the logical chain is 'Will you save more by waiting, and buying at a lower price, than if you bought at the present price and got the benefit of your purchase?'

"Now you come to close grips

with your prospective customer. You have got to show not only the worth of the article intrinsically, but also the value of that article to the prospective customer compared with what it will cost him to do without it.

The Farmer and the Screw Plate.

"Take the case of the farmer who wants a screw plate, but feels he can not afford it and thinks that prices will be lowered a year from now. Suppose that screw plate lists at \$25.00. What is a possible low price for that next year? Ten per cent off? Twenty per cent off? No one knows, but the probability is that if any, the first case is nearer right than the second. However, grant the farmer the extremest possible conditions, of 20 per cent off, so that next year this screw plate might sell for \$20.00. If he waits a year he will save \$5.00. If he buys now what will he save?

"This farmer has a certain number of agricultural implements; an ensilage cutter and blower; a mowing machine; a reaper and binder; a grain drill; a cultivator; a disc harrow; a manure spreader. All of these implements have had a season's hard usage. They are loose in every joint. Nuts and bolts are missing. Other nuts are frozen, studs are useless because the threads are battered and bruised. They've all got to be gone over before the implements can be used for any length of time.

"With this screw plate the farmer can dress up the bruised studs, and put nuts back on. He can make new bolts and nuts out of the old junk he has lying around with this screw plate. If some casting is broken frequently he can repair it with a strip across the break, and bolted down at each end, which is cheaper than buying a replacement part or having the part that is broken, welded. He can do repairs on these half-dozen implements in his spare time, and come back to work with implements that are really usable and sound. When he has done all this repairing he still has his screw plate, as good as new.

Supposing he does without it un-

til next year, what will he do with these implements? He will have to send away for replacement parts where parts are broken. He will have to pay for new bolts and nuts when he has dozens of old ones lying around, and these assemblies always cost more when they are bought from a spare parts or replacement parts catalogue than if they are bought in open market. The advantage is, of course, that



F. Alexander Chandler.

they fit, and the ones in the open market may not.

"Tell me, will he spend more than the \$5.00 he has saved if he tries this course? And when he is all done and has spent his money, *what has he got to show for it* but the repairs?

"The man who thinks about the price he has to pay for an article may be a shrewd buyer—and probably is. But buying is only 10 per cent of the battle.

Picture Results From Purchase.

"The man who thinks about what he is *going to get out of* what he is buying and buys *because* he knows that what he buys will

1. Pay him a profit.
2. Eliminate delays.
3. Save his temper.
4. Make life happier and a lot brighter—

is the wisest buyer and most people buy that way.

"Price is important. It's one-tenth of the battle. But *usefulness* is more important and is 90 per cent of your life.

"It seems to me that that is the way to answer the question 'Shall I Wait Until Prices Are Lower?'

Winner of First Prizes Writes on Window Display.

The principles by whose application E. Rahn of Guelph, Ontario, Canada, won the first prize in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition are briefly and instructively set forth in the following article which he has written for our readers:

TO AMERICAN ARTISAN AND HARDWARE RECORD:

The principal method that I use in decorating a window is always using a center object, that is, have something which you wish the public to take particular notice of in the center and then build around it, having the articles when drawn in lines converge at the one object.

This method I find to be the best way to advertise some definite object.

If one does not want to feature one article in particular, have the center of the window raised and the remainder of the goods placed so as to point toward it.

This method of having the articles appear to converge at the center always has a tendency to draw people to the heart of the window, thus getting them more interested.

Another method is the grouping of articles of one kind of different sizes together, thus giving the public a real idea of the different sizes made of different articles.

Then I also find that on special days or sales pyramiding of the specials with a good size price tag on each pyramid to work out well as it gives the appearance of a large stock when placed one on top of the other more than what it would if placed side by side.

These three methods are the most important, and attractive window will result. When the center object or elevation is used, always place the small articles around the base and the larger ones farther away. This gives it an appearance of leaning towards the center.

E. RAHN.

Guleph, Ontario, Canada,
May 2, 1922.

Suggestions and Plans for Window Displays.

Instructive Examples from Exhibits in AMERICAN ARTISAN
AND HARDWARE RECORD Window Display Competition.

DISPLAY IS AWARDED THIRD PRIZE.

It is possible to display with beguiling symmetry an assortment of tools made of the poorest kind of cast steel.

In such a display there may be

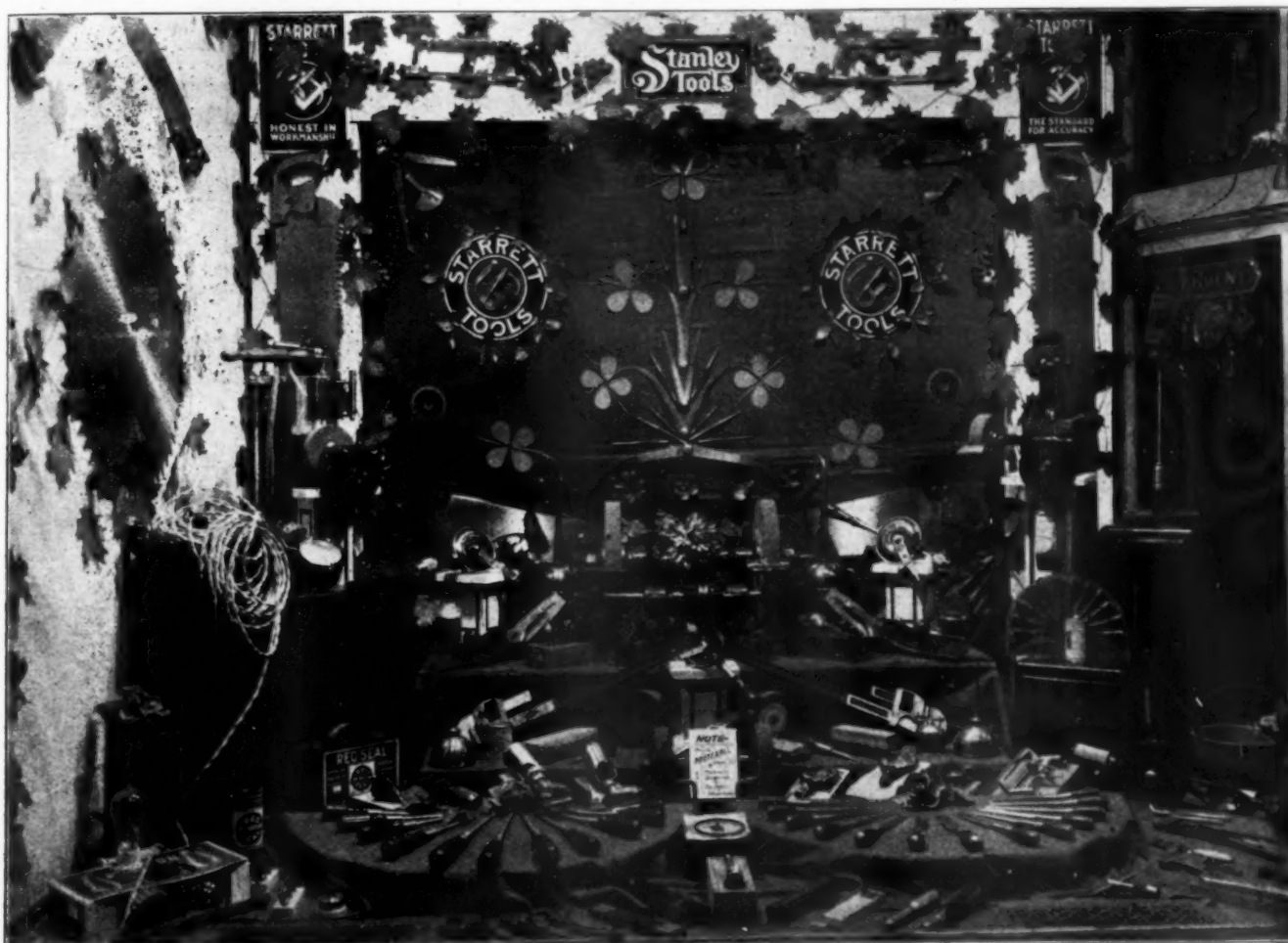
It is evident, therefore, that window advertising must possess other values than those contained in artistry of design and cleverness of appeal.

Besides arresting the notice of the observer, it must gain his confidence.

customer would be influenced by it.

That is to say, they were favorably impressed by its neatness and by the artistry of its arrangement.

The purely physical appeal of this display was strengthened by the confidence produced by the unmistakable evidences of quality.



Window Display of Tools Awarded Third Prize in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. Designed and Arranged by M. G. Cottier for Murphy-Maclay Hardware Company, Great Falls, Montana.

the full force of lighting, pleasing colors, and attractive background.

It would be comparatively easy to deceive the average householder by an exhibit of this sort, although skilled mechanics would be likely to react unfavorably toward it after the first impressions passed away.

The fatal defect in an arrangement of the character under consideration is that it lacks quality.

The window display of tools arranged by M. G. Cottier for Murphy-Maclay Hardware Company, shown in the accompanying illustration, was awarded third prize in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

The judges of the competition were influenced by it in practically the same way that the prospective

Prominently shown in the exhibit are the names and trade-marks of three nationally known manufacturers of standardized tools.

This feature of the display gives finality to its selling message.

As described by Mr. Cottier, who designed this window display, "the color scheme is dark green, white, and orange.

"The background of the window

is a dark green drape stretched entirely across the backing of the recess and fastened to it. On the drape, I mounted the small machinists' tools shown in flower-like sprays, making the petals of yellow cardboard.

Bordering the green background is a sort of wide frame of beaver board, painted pure white, and decorated with autumn leaves and grapes.

"Small colored lamps are placed behind the white frame, and the lighting effect on the background and tools was very satisfactory.

"Orange cloth was used in the floor construction, with the slightly raised platforms in the foreground and the higher ones in the center of the window, to facilitate the easy display of a good assortment of tools.

"I feel that no further explanation is necessary to illustrate just how the artificial flowers and colorings were used to brighten up the tools displayed.

"It was necessary for the photographer to take this window at a certain distance, and on a level but slightly higher than the floor, which tends to make the photograph appear to be that of a crowded window.

"However, standing and looking down into the window, as it is seen by the passer-by, this display was very attractive.

"We noticed a considerable increase of interest in our tool department while this window was in, and believe it one of our best paying displays."

Old Guard Votes Sincere Thanks to AMERICAN ARTISAN.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

At the annual meeting of the Old Guard Southern Hardware Salesmen's Association held in New Orleans, Louisiana, April 19th, it was ordered by unanimous vote that the sincere thanks of the Association and its individual members be extended to AMERICAN ARTISAN AND HARDWARE RECORD for its interest

in our Association and its many and continued courtesies to the Association and its members.

We wish to thank your manager, Miss Etta Cohn, for coming to the convention. We enjoyed meeting her and very much hope her trip was a pleasant one.

Cordially yours,

R. P. BOYD,

Secretary-treasurer.

Knoxville, Tennessee, April 28, 1922.

This Is the Day of the Business Smile.

Not an artificial smirk but a genial smile is the true business smile.

It comes from the owner or clerk who believes in the business and finds pleasure in it.

This is the day of the business smile in word and manner. Cultivate and nurse it.

Acquire it yourself; educate your employees in its value to them and to you.

There is no better help to advertising and it costs nothing.

So for the sake of good advertising and good business, Smile, Smile, Smile!

Coming Conventions

American Zinc Institute, Hotel Statler, St. Louis, Missouri, May 8 and 9, 1922. S. S. Tuthill, Secretary, 27 Cedar Street, New York City.

Panhandle Hardware and Implement Association, Amarillo, Texas, May 8 and 9, 1922. C. L. Thompson, Secretary, Canyon, Texas.

Stove Founders' National Defense Association, Hotel Astor, May 9, 1922. Robert W. Sloan, Secretary, Pittston, Pennsylvania.

Southeastern Retail Hardware and Implement Association, Convention and Exhibit, May 9, 10, 11, and 12, 1922, Chattanooga, Tennessee. Walter Harlan, Secretary, 460 St. James Building, Jacksonville, Florida.

National Association of Stove Manufacturers, Hotel Astor, May 10 and 11, 1922. Robert S. Wood, Secretary, Troy, New York.

Western Warm Air Furnace and Supply Association, Indianapolis, Indiana, May 15, 1922. John H. Hussie, Secretary, 2407 Cumming Street, Omaha, Nebraska.

Sheet Metal Contractors' Association of Indiana, Indianapolis, Indiana, May 15, 1922. Ralph R. Reeder, Secretary, 312 East Sixteenth Street, Indianapolis, Indiana.

Hardware Association of the Carolinas, Winston-Salem, North Carolina, May 17, 18, 19 and 20, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

National Association of Sheet Metal Contractors' Convention and Exhibition in the Cadle Auditorium, Indianapolis, Indiana, May 16, 17, 18, and 19, 1922. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia, Pennsylvania.

Mississippi Retail Hardware and Implement Association Convention and Exhibit, Fair Grounds, Jackson, Mississippi, May 24, 25 and 26, 1922. Headquarters, Heidelberg Hotel. E. R. Gross, Secretary-Treasurer, Agricultural College, Mississippi.

American Society of Heating and Ventilating Engineers, Semi-Annual Meeting, June 5, 6, and 7, 1922, Hotel Iroquois, Buffalo, New York, and June 8, 9, and 10, 1922, Hotel Wolverine, Detroit, Michigan. C. W. Obert, Secretary, 29 West Thirty-ninth Street, New York City.

Metal Branch National Hardware Association, Hotel Statler, Cleveland, Ohio, June 9 and 10, 1922. W. H. Donlevy, Chairman, 1012-14 Cherry Street, Philadelphia, Pennsylvania.

Associated Advertising Clubs of the World, Milwaukee, Wisconsin, June 11, 12, 13, 14 and 15, 1922. Carl Hunt, Secretary, 110 West 40th Street, New York City.

National Retail Hardware Association, Chicago, Illinois, June 19, 20, 21, 22 and 23, 1922. Headquarters, Hotel Sherman. Herbert P. Sheets, Secretary-Treasurer, Argos, Indiana.

Master Sheet Metal Contractors' Association of Ohio, Zanesville, Ohio, July 18 and 19, 1922. W. J. Kaiser, Secretary, 123 East Chestnut Street, Columbus, Ohio.

Retail Hardware Doings

Illinois.

C. A. Waddell has traded his stock of hardware at Sullivan to George Query of near Allenville for forty acres of farm land.

T. E. Tull of Monticello has moved his hardware stock into the Ayre Building on West Washington Street.

The hardware firm of Lupton and DeLay at Pawnee has dissolved partnership. C. A. DeLay has purchased the interest of A. S. Lupton.

Iowa.

Fire destroyed the stock of Burma and Yost hardware store at Bristow.

Michigan.

The Hillsdale Hardware Company of Hillsdale has remodeled its store building.

The Wilcox Hardware Company's store at Adrian has been damaged by fire. The loss is estimated to be \$15,000.

The Eray Hardware Company of Saginaw has been incorporated with an authorized capital stock of \$12,000.

Wisconsin.

M. C. Christensen has opened a hardware store at 1649 Asylum Avenue, Racine.

The Reineman Hardware Company of Burlington has increased its capital stock to \$25,000.

Study and Interpretation of Advertisements.

You Can Make Your Advertisements More Gainful by Avoiding the Faults and Profiting by the Good Qualities of Others.

Neat, well balanced, and with plenty of white space with which to accentuate its various items, the advertisement of the High Street Hardware Company, reproduced

We Can Take Care of Your Spring Needs in Every Detail

All Kinds of Garden Tools

Paris Green

Seeds

Flower

Guard

Fencing

Poultry Wire

Garden Hose

Paint for all

purposes

Varnish

Brushes

Window

Glass

Roofing, etc.



SPECIAL
9 gal.
Garbage
Can
\$1.39

We Can Take Care of All Your Bicycle Wants

Have Your Lawn Mower Ground Now

We Grind Them By Machine

High Street Hdw. Co.

720-26 High St. Phone 4137

"We can take care of your spring needs in every detail."

Other hardware dealers say the same thing, but go no farther. They mention no prices, and give no idea of what the things will cost the customer.

But the High Street Hardware Company, by the simple device of illustrating one particular article and mentioning its price in big type, contrives to convey the impression of similarly reasonable prices for all the other groups of gardening commodities referred to in the advertisement.

In the space at its disposal, it is impracticable to give prices and sizes and varieties of the various things mentioned.

But the advertisement is saved from vagueness by the single price quotation in the center of the copy.

The reader gets the impression of big assortment of supplies, of reasonable price, and of a friendly willingness to serve him.

This is a good advertisement and is sure to promote sales.

* * *

As a rule, illustrations constitute a big help in carrying a selling message to the people.

We think in pictures.

Words are forceful only to the extent in which they arouse distinct images in the mind.

But there is such a thing as depending too much upon illustrations when the space occupied by the selling message is not large enough to permit a proper balance between illustration and text.

In the case of the advertisement of the Bridge Hardware Company, the illustration is out of proportion to the text.

The sentence, "we sell the best fishing tackle," is not sufficiently conclusive to bring about actual sales.

The reason for this is that prac-

tically every other hardware firm makes the same general statement.

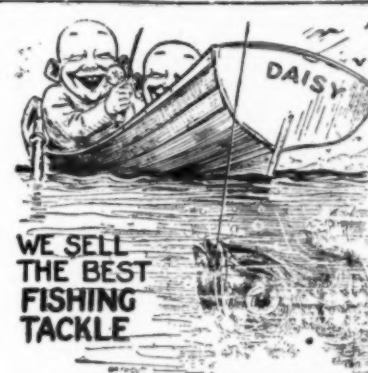
The people have acquired the habit of discounting statements which are phrased in the superlative.

No idea of price or brand is given in the advertisement.

Consequently the prospective customer has nothing definite upon which to form judgment.

We would suggest more definite text price quotation and less illustration in this class of advertisements.

Granting that this is true, nevertheless, this advertisement is lack-



"SAVE THE DIFFERENCE"
Bridge Hdw. Co.

North Side Square

Kenton, Ohio

ing in distinctiveness of selling argument.

In the original it measures 12 by 4½ inches, so that there is plenty of space for the mention of a few typical articles of builders' hardware with prices and descriptions.

While this advertisement keeps the name of the Brown and Chappel Company before the public in connection with builders' hardware, it does not focus attention to the point of buying.

* * *

There are two kinds of liquid assets. One enables a man to float a loan, and the other sometimes makes it difficult for him even to stand alone.—The Credit Monthly.

herewith from the *Racine Call*, Racine, Wisconsin, is worth studying.

It is especially commended to those hardware dealers who have the habit of making vague general announcements.

The High Street Hardware Company says at the head of this copy,

Facts of Warm Air Heating and Ventilating.

Reports of Progress in Warm Air Heater Research Work. Ventilating Factories, Theatres and Other Buildings.

Enterprise Foundry Company Adds Two Buildings to Warehousing Facilities.

The Enterprise Foundry Company, Belleville, Illinois, is completing a two-story warehouse, 65x165 feet, and as soon as this is finished, work will be started on another warehouse, 65x100 feet and three stories high, with loading platform at the railroad siding.

Both buildings will be equipped with electric elevators and other modern warehousing equipment.

A new sand blast room and machinery will also be installed for finishing furnace castings.

The front end of the two-story building—20x65 feet—will be used for office and display rooms for the newly formed Turton Furnace Company Division of the Enterprise Foundry Company, with

George W. Turton as pilot of the Division.

These buildings are to house a stock of "Solar" and "Turton" pipe and pipeless warm air furnace which are being manufactured by the Enterprise Foundry Company.

Both buildings will be heated by "Solar" and "Turton" pipeless heating systems. The office and display rooms will be served by a "Turton" pipeless heater, installed under the partition between the office and warerooms, which is equipped with an adjustable heat device.

Mr. Turton is a well-known heating engineer and is the inventor of the two new warm air furnaces mentioned in the foregoing and the Enterprise Foundry Company has been engaged in producing furnaces for many years.

each one of these points, which numbered twelve.

Each letter selected was reproduced in imitation typewriter printing on light-colored brown paper, loose-leaf style. At the bottom was reproduced the photograph of the writer's home. Each page was 8½ inches by 11 inches.

Printed tabs mark the twelve divisions of the letters so the salesman can refer quickly to whatever point he wants. Pieces of cardboard front and back with a couple of fasteners at the top protect the packet of sales ammunition against wear.

All the letters have a flavor local to the selling district. For instance, the cover of the New England sales manager would be found to read, "What users say means something," with below the words, "Let New England's users answer your question." Every letter within is from one of the six New England states.

"But I prefer steam and hot water heating," the wily prospect may parry. The salesman can make a general statement showing why the one-pipe furnace system is better and then back it up by exhibiting the detailed experience of Mr. Burr A. Hollister, of Torrington, Connecticut, and showing Mr. Hollister's snow-surrounded home.

Letters for a typical sales territory of a number of states are divided up as follows, to some extent giving an idea of the relative importance of the various selling points: Warmth, 9; comfort, 11; convenience, 6; cleanliness, 2; economy, 9; value, 14; compared with steam and hot water, 7; auxiliary use, 1; churches, stores, hotels, factories, garages, 11; wood as a fuel, 4; cool basements, 4.

The document of 71 letters might be called the "automatic objection answerer." The part the dealers

Warm Air Furnace Manufacturer Makes Good Use of Testimonials.

Salesmen Use Letters from Users to Overcome Objections and Doubts.

INSTALLERS of warm air furnaces will find in the following article, by James M. Mosely, in *Printers' Ink Monthly* several good suggestions for their collection of Selling Helps:

A large manufacturer of one-pipe furnaces has hit upon a human interest application of an old, time-tried idea in somewhat new form, which has made his sales jump merrily both for his salesmen and his dealers.

In the first place, he authorized all his dealers, with whom he maintains unusually close contacts, to write to all their users of the heating system—the company never refers to it as a furnace—with a request for personal experiences with the system.

Each user was asked certain questions such as "Does it keep your house warm?", "Is it clean?", "Do you find it economical?" and so on. The user was asked to embody his answers in the form of a letter. In each town a price of a ton of coal for the best letter submitted was offered, the company paying two-thirds of the cost.

Naturally, the company came into possession of letters which it saw would be top-notch selling material. With each letter, it was given a photograph of the user's home. Better yet!

Then an analysis was made of the chief points on which dubious customers most often get off at a no-sale tangent. Particularly effective letters were picked to back up

played in compiling it as well as its helpfulness have caused them to use it with close to one hundred per cent effectiveness. The salesmen themselves, through constant reference to it, keep "brushed up" on all the selling points that count, and the prospective buyer gets a much more satisfactory idea of how the investment he is asked to make is going to work out for him.

Advocates New Word in Place of "Ventilation."

Dr. E. Vernon Hill of Chicago, former president of the American Society of Heating and Ventilating Engineers, in defining the term "aerologist," said that ventilation is a word that does not carry the proper meaning, as it means literally "to blow through."

We know, for instance, that it would not be correct to say that the opening of the windows of a car constitutes ventilation.

"Fresh air" and "foul air," are other terms that should not be used by engineers.

In short we need new terms to accord with the progress of our profession.

By "ventilation" we really mean "aerology."

Dr. Hill urged the adoption of this term, stating that it would eliminate, among other things, any ground for argument between the advocates of mechanical and natural ventilation.

Colors Have Power to Reflect Heat.

The heat-reflecting properties of colors are described in a paper by Henry A. Gardner at a meeting of the Pennsylvania State Association of Master Painters and Decorators in Philadelphia, as follows:

In considering the effect of the different types of rays of which light is composed, it was found that the calorific or heat-producing rays are conducted by painted or finished objects in widely varying degree, and this fact should be studied by the contracting painter who is called upon to paint the enormous

areas presented by metal oil tanks, since such tanks may contain light distillates, which, upon becoming warm, produce highly expansible vapors.

With black or dark-colored paints rapid absorption of heat takes place and considerable losses by evaporation are apt to occur, and white or light-colored paint should therefore be used for the finishing coats on oil storage tanks.

Paints presenting a high gloss are, moreover, less absorptive of thermal rays than those presenting a matte surface.

The author's experiments were made on a series of small cylindrical metal tanks containing a standard amount of benzine and painted on their exterior surfaces in various colors.

Through the pressure opening in the tops, accurate thermometers were inserted, and the tanks individually placed in a cabinet containing an open front where they were subjected to the rays of a powerful arc light for fifteen minutes.

The rise in temperature of the benzine is shown in the following table:

Rise in Temperature of Benzine Contained in Small Tanks Painted in Various Colors (Gloss Finish), When Subjected to Rays of Carbon Arc for Period of Fifteen Minutes.

| Color. | Rise in Degrees Fahrenheit |
|----------------------------|----------------------------|
| Tin Plate | 19.8 |
| Aluminum Paint | 20.5 |
| White Paint | 22.5 |
| Light Cream Paint..... | 23.0 |
| Light Pink Paint..... | 23.7 |
| Light Blue Paint..... | 24.3 |
| Light Gray Paint..... | 26.3 |
| Light Green Paint..... | 26.6 |
| Red Iron Oxide Paint..... | 29.7 |
| Dark Prussian Blue Paint.. | 36.7 |
| Dark Chrome Green Paint.. | 39.9 |
| Black Paint | 54.0 |

Although plain tin, on account of its smooth bright surface, gave the best results, it does not constitute a practical finish, as iron coated with tin corrodes on exposure unless protected with paint.

Aluminum paint gave very good results, but it is not nearly as serviceable as a lead and zinc linseed oil point.

Since, in the author's experiments, white paints faintly tinted gave substantially the same heat-re-

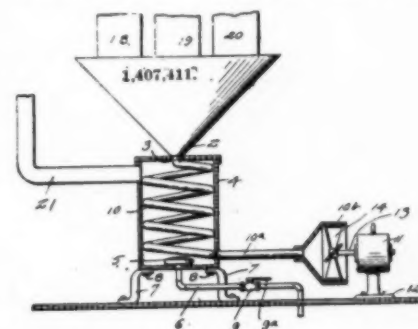
flecting properties as white paints, the former should be given the preference, as they are more restful to to eye and more durable on long-time exposure.

The same consideration should be observed in the painting of gas-holders.

Forced Warm Air Heater Is Patented.

Harry Harlow, Louisville, Kentucky, assignor of four-tenths to James Morgan Yewell, Louisville, Kentucky, has obtained United States patent rights under number 1,407,411, for a forced warm air heater herewith described:

A forced hot air heater including a casing, an air heating coil rising therein, a funnel shaped heat dis-



tributing drum above the casing and to the lower smaller end of which the upper end of the coil is connected, heat distributing pipes leading from the upper larger end of said drum, a burner in the lower portion of the casing having a valved supply pipe, a fan casing connected to the lower end of the heating coil, a fan therein, a motor actuating the fan, and a thermostat controlling the supply of heated air, as described.

Ask Yourself This Question.

Give yourself an honest answer to this question.

Do you really enjoy your work, or are you constantly growling about its being the meanest business in the world?

It is if you say so, to you, or you can glorify it and make it the finest thing under the blue canopy of heaven. Take your choice!

Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business.
News from Various Branches of the Sheet Metal Trade.

PATTERNS FOR DIAGONAL ELBOW.

By O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

A correspondent sent the writer the sketch of elbows shown at the left of the enclosed drawing.

venient to lay off the work, say a quarter full size, and then when laying out the pattern, simply enlarge your lines 4 times.

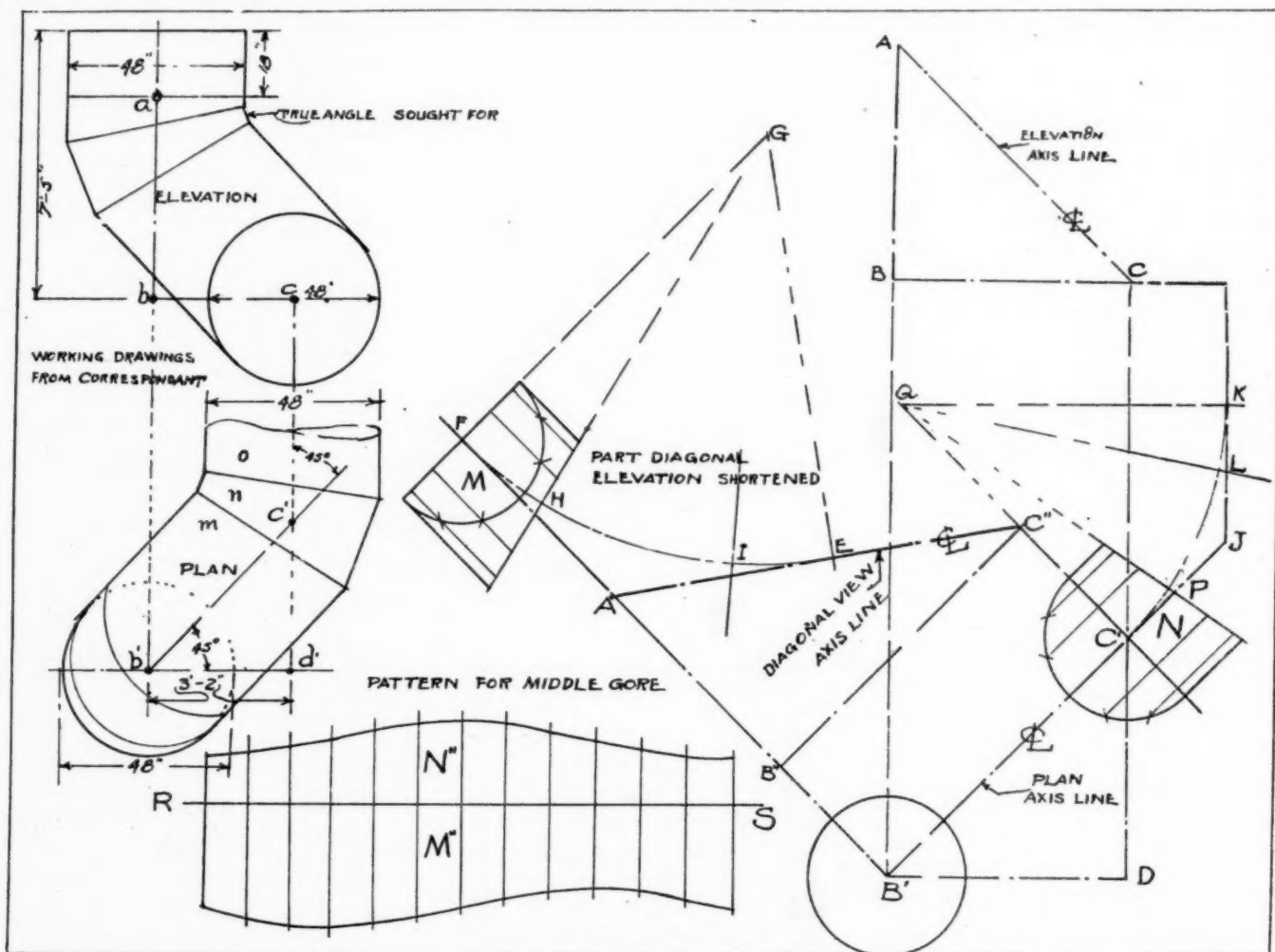
But in this extreme accuracy must be followed or trouble will be met with.

To prepare a working drawing, we first draw the elevation axis line with the altitude as A-B, and the

will fit in from B' to C' and then the horizontal angle will extend beyond this form C' to J-K.

Hence, we must develop a diagonal view through plan in order to get the true position and shape of lines.

So from B' and C' we square out lines at right angles and then draw B''-C'' parallel to B'-C'.



Patterns for Diagonal Elbow.

Observe the elevation has a drop of a-b with an offset as b-c.

Now the plans has an offset equal to d'-c', which gives an axis line as b'-c'.

As the pipe is 48 inches in diameter, it is rather large working and laying out.

In such cases, it is often con-

venient to lay off the work, say a quarter full size, and then when laying out the pattern, simply enlarge your lines 4 times.

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will fit in from B' to C' and then the horizontal angle will extend beyond this form C' to J-K.

Hence, we must develop a diagonal view through plan in order to get the true position and shape of lines.

So from B' and C' we square out lines at right angles and then draw B''-C'' parallel to B'-C'.

After this, the part diagonal elevation of elbow is described in, working from the center line, so

the pipe will be wrapped around this diagonal elevation axis.

In this case, to avoid confusion, we shorten the elevation as F-A"-E. But in reality, the angle F-A"-C" must be treated as a full angle, the same as we treat this one.

By squaring out a line from F and E so they are at right angles to their base lines, they will intersect at G.

Then G is the center to describe the arc F-E. Observe in practice, the line E-G would be shifted over as C"-G wherever it would intersect.

That would make a larger radius and lengthen the gore pieces.

So divide this arc F-E in 4 equal parts and that treats this diagonal elevation into a 3 piece angle.

The first spaces as H and I are the center for drawing the miter line to G. Observe we only need the space F-H and so by describing section M we treat that upper gore piece as shown, and lay off the pattern as below M".

Now as this elevation angle and the horizontal angle are part of the same one, we can see that the space I-E if set to C" we would have a similar gore as at M.

Then instead of making a square cut on the end, we simply use that straight line as C'-Q as a twist line and add the gore N.

Notice that this gore N is treated the same as any three piece angle as C'-J-K.

By treating this arc in 4 spaces, we get the miters P and L and with this we are able to wrap the gore N around the axis line.

So these lines from gore N are set up above R-3 in pattern for N" as shown, taking care to give a quarter turn to the spaces.

Observe in the gore M we started with the side line to make a fish tail miter cut, and now to give a quarter turn to the gore N we must start with the throat, and that will give the miter as at N".

With these 2 miters developed and the line R-S set in place, the balance of the patterns for both the diagonal elevation and the horizon-

tal angle can be easily marked off by reversing the patterns and transferring the miter cut lines.

By working this elbow out on this basis, it will save a great deal of projection and give you the results you want, only laps for riveting must be allowed extra.

Observe if laps are not allowed and stock is taken from the gore pieces for making the seams in the miters, then because of the several miters, there will be a shortage in the fitting, in both height and offset.

Crimped Metal Flashing Prevents Buckling.

Written Especially for American Artisan and Hardware Record by L. S. Bonbrake, Peoria, Illinois.

Plain flat tin or galvanized iron almost universally used for flashing decks, etc., or for covering over the ends of slate or other shingles abutting against a higher building, will buckle and kink on its outer edge as it is poor practice to nail close there.

If provided with a quarter inch hem, forming a complete fold back under the metal at this edge, it will stiffen into a uniform straight line when reinforced by a slight crimp or downward bend immediately back of the hem.

If the corner bend of the flash is given more pitch than the roof, the front of the flashing will bind down more firmly upon the shingles when the back is forced down into place.

Explains How to Construct a Vacuum Cistern Cleaner.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

In reply to the request of H. H. Christensen in your issue of April 15th, I enclose sketch of vacuum cleaner for cisterns.

However, I do not recommend a vacuum cleaner to do a first-class job, as I think the only way is to pump out the water and get down in the cistern and scour it clean.

The vacuum cistern cleaner shown in my sketch can be made at any tinshop.

The funnel is made of galvanized iron, 20 inches long and 10 inches in diameter at widest part.

It has a leather valve over it, so that when it is pushed down the valve opens and lets the dirt into the funnel part.

It can be used in two ways by

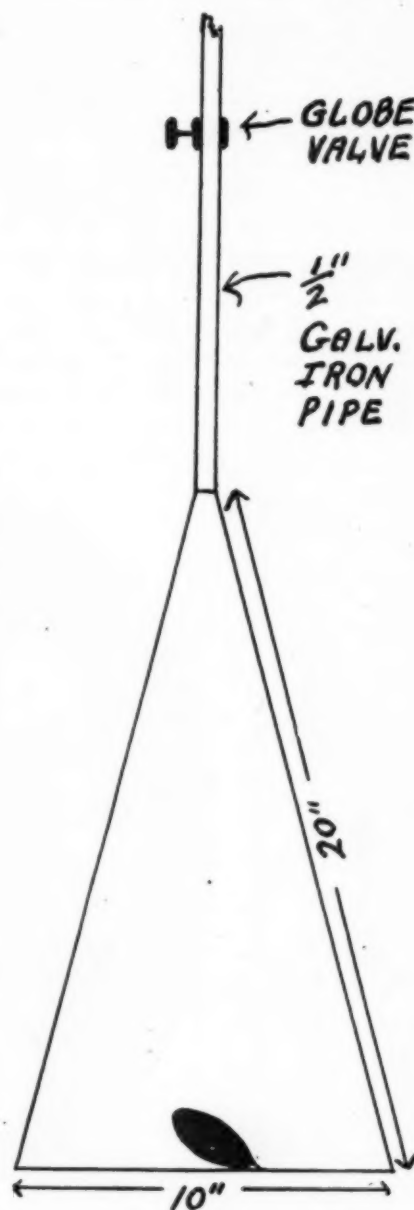


Diagram of Vacuum Cistern Cleaner.

connecting a hose on top to take the dirt and water away or by pulling it up and emptying it.

I have made quite a number of them, generally using No. 26 galvanized iron for the funnel and bottom and a piece of heavy leather for the valve on the bottom.

Yours truly,

WILL H. ROUSH.

—, Ohio, April 29, 1922.

Delegates to the Convention of Sheet Metal Contractors' Association of Missouri Learn Much about Uses of Zinc.

They Visit Zinc Mines and Hold Joint Meeting with District Branches of the American Zinc Institute and of the American Mining Congress.

ZINC in its many phases, from the raw ore to the finished products ready for the hand of the craftsman or the use of the customer, formed the chief topic of study and discussion at the second annual convention of the Sheet Metal Contractors' Association of Missouri, April 28 and 29, 1922, in Joplin, Missouri.

April 28, 1922.

After registering at the convention headquarters in the Connor Hotel, Friday morning, April 28th, the delegates were taken in a spe-

where a joint meeting was held of their association with the district branches of the American Zinc Institute and of the American Mining Congress.

Following a substantial luncheon, the delegates listened to an address on uses of zinc by E. H. Wolff, general manager Illinois Zinc Company and president of the American Zinc Institute.

Mr. Wolff said the average worker in metals would prefer to work with almost any other metal than zinc, but declared this was because

He stated that one of the common reasons for failure in working with zinc is the use of an improper flux in soldering, and having the soldering iron at too hot a temperature.

He suggested that small particles of zinc be dropped into the acid until it will absorb no more, and then only a semi-hot iron be used. He also discussed the contractibility of the metal, and told of the methods employed to obviate trouble from this source.

At the close of his address, Mr. Wolff invited questions and numerous of the metal workers availed themselves of the privilege, the result being an interesting and instructive round table discussion.

Then came a highly instructive address on zinc by Stephen S. Tuthill, secretary American Zinc Institute, the full text of which is as follows:

Address by Stephen S. Tuthill, Secretary American Zinc Institute.

It will be recalled that during the World War, our Government, following the example of the more efficiently organized participants, refused to deal with individuals in the matter of the distribution and allocation of fuel, raw material and finished products and insisted upon working through a war service, or temporary trade, association in each industry if that industry was not already organized. In this way the Government mobilized the industries which must necessarily function with it.

It was during such functioning in the life of the Second Zinc Producers Committee that the American Zinc Institute was conceived at Washington. It was born in the City of Joplin, and in due time taken to St. Louis and there, in the summer of 1918, duly baptized in the presence of its supposedly richer relatives from other parts of the United States.

That baptismal ceremony was performed before the promulgation of the Eighteenth Amendment, and I am unashamed to say that many zinc men always recall that event with a great deal of pleasure, coupled with a longing for the pre-Volstead days.

Throughout nearly four years of association representatives of nearly 95 per cent of the United States Zinc industry have more and more acted upon the common sense theory that the only way to solve their own problems is to help their competitors solve theirs through amicable association in their Institute.



H. W. Symonds, Re-elected President.

cial car of the Southwest Missouri Railroad Company to Picher, Oklahoma.

Here they were turned over to George Potter, superintendent of the Eagle-Picher Lead Company's mines, and were shown through the big Netta concentrating plant, and then lowered in cages into the mine.

At noon they were taken to the club house of the Tri-State branch of the American Zinc Institute,

of lack of knowledge of the metal, and intimated that as this knowledge is acquired the metal will become one of the most popular with the metal workers.

He told briefly of the process of refining and rolling zinc, as practiced by his firm, the Illinois Zinc Company, La Salle, Illinois, and incidentally stated that they were at present operating the only union coal mine in the state of Illinois.

This is equally true of hundreds of other associations similarly organized.

It may be here observed that the association of men with a common aim should make for the betterment of a man and his business; if it does not, there is something radically wrong with the man or his business.

During the war hundreds of additional mines were opened, especially in this, the Missouri-Kansas-Oklahoma district.

Zinc smelting plants were not only enlarged by the addition of thousands of retorts, but the output of a large electrolytic zinc plant in Montana was added to the production.

Therefore, one of the first problems which confronted the members of the American Zinc Institute was to provide an efficient shock absorber for the inevitable readjustment of an industry which had been increased more than 100 per cent in output in order to meet war's demands.

These men clearly saw that the only solution of this problem was in finding new uses for zinc. It required no education to prove to them that the greatest expansion for their industry eventually lay in the development of zinc roofing in this country—an expansion which meant a large increase of tonnage in all branches of the zinc industry.

I am glad of the opportunity to speak to the members of the Sheet Metal Contractors Association of Missouri on the subject of zinc roofing.

There are at least two reasons why the sheet metal workers of this section of the United States should push, boost and use zinc for roofing purposes.

One is based upon sentiment, however, that has a decidedly practical side, as sentiment sometimes has. To be explicit, the increase of zinc for roofing purposes means not only the success of the miners of zinc but also of the other business interests of this section, including, of course, the sheet metal workers.

The second is that zinc roofing material is the best roofing for the money that has ever been introduced.

We hear divers reasons why zinc has not heretofore been used for roofing purposes in the United States. What do you and I care about these reasons if we can be convinced that zinc roofing will give 100 per cent satisfaction to the buyer and at the same time make money for you.

Americans, unfortunately, have been prone more or less to observe permanence as regards foundations, walls and interior divisions, while being satisfied with roofs that must be repaired and repainted annually and frequently replaced.

But that time is passing.

In forming your judgment of zinc in relation to your business, you must bear in mind that factors which are directing earnest attention to zinc for roofing are the present day high labor and material costs; these factors, generally, are promoting a more substantial form of building construction in the United States.

The architect has now little difficulty in convincing his client that the extra first cost (comparatively small for zinc) incident to the use of a more durable type of construction is justifiably offset by economy of maintenance. What the architect can do in this respect the sheet metal worker can do also.

In Europe zinc has for many decades been given first consideration in the erection of all kinds of buildings. This is no doubt due to the fact that Europeans build permanent buildings in a per-

manent way. Through more than 100 years of experience with sheet zinc they have learned that zinc, in batten, corrugated or shingle form, makes the best roofing, because when it is placed on a building their roofing troubles are at an end. This is equally true of gutters, down-spouts, flashings and other roofing accessories. Many cities abroad are simply blanketed with zinc roofing. There are thousands of examples of European zinc roofs which were placed 50, 75 and 100 years ago and which are today as good as new, and, if these buildings were torn down, the roofs would still have an appreciable salvage value. Europe's thrift bespeaks volumes for the economy of zinc in building activity, and it forms the basis of appeal which is today being made to the United States on behalf of this century-tried roofing and spouting material.

Any American sheet zinc is as good as any European sheet zinc, and some of it is a great deal better.

There are, however, several directions in which we must carry on a campaign to popularize zinc for construction purposes, and that we intend to do on a much larger scale than we are doing now.

One line of education must be against the American tendency to put on cheaper material, thus saving on the first cost without investigating the lasting qualities; in other words, the question of ultimate cost.

The other fellow to be attended to is the sheet metal worker.

It is true that now and then we find a sheet metal worker who asks why he should advocate a roofing material which will last at least 100 years when he can get away with another metal roofing that will have to be repainted every year and renewed every five or ten years. The answer is that such a man will stay in business only long enough for his customers to get wise to him, and zinc's advertising will put him wise. Then this artisan will be forced to leave the ranks of an ancient and honorable calling and join those of the men who spend their days in laying composition roofings, a job that can be done by any Manual Training pupil. Furthermore, such an attitude hardly squares with the code of good old-fashioned honesty.

On the whole, however, the sheet metal workers of this country have taken more kindly to zinc than it was really expected they would do. Of course, in your trade, and in all other trades, there are men who are constitutionally averse to new materials and new methods. While objectors have not been found numerous, their attitude is really based on a lack of knowledge. As no real effort has been made until recently by the zinc men to instruct the sheet metal workers in the use of zinc, which is really no more difficult to lay than any other metal, the sheet metal men of this country can not be blamed for using other metals in place of zinc, a metal of somewhat though slightly different characteristics from the others.

But the American Zinc Institute and the individual manufacturers of zinc roofing and its accessories are working to remedy this condition.

I have brought with me a number of sets of our roofing service sheets for distribution at this meeting. Be sure to take a set home with you.

Briefly, these sheets illustrate and explain the use of corrugated zinc for roofing and siding and the use of sheet

zinc for roofing over battens, and so forth and so forth. Many thousands of copies of these sheets have already been distributed by the publishers and by the Institute.

Since these sheets were issued there has been a marked development in zinc shingles and in zinc gutters, leaders, etc.

If accompanying instructions are followed, 100 per cent results are guaranteed.

Through the courtesy of the Trade Development Committee of the National Association of Sheet Metal Contractors, of which Mr. Paul F. Brandstedt is chairman, the American Zinc Institute is now assembling zinc working data for the sheet metal workers' Encyclopedia now in preparation by that Committee.

The American Zinc Institute has practically completed the pamphlet of the American Zinc Workers' Hand Book, written in easily-understood English and copiously illustrated. The book follows the lines of the celebrated Eugene Smits Zinc Workers' Hand Book, published under the supervision of the Visille-Montagne Company, of Belgium. As you may know, that is the company which has been largely instrumental in popularizing zinc roofing abroad. Our hand book will be issued about July 1, and a copy of it should be in the hands of every sheet metal worker who wants to keep up with the procession.

Sheet zinc, like all other metals, has a few peculiarities. Its advantages, however, are such as to make it well worth while to meet these peculiarities. All the sheet metal worker has to do in working zinc is to do as he does in working any other metal, observe instructions.

Now, following the way of the world, let us talk for a few minutes about the so-called peculiarities of zinc—comparative mole-hills out of which so-called competitors, with inferior products, have tried to make mountains.

All metal roofs and accessories of like type are, I understand, applied in the same general way. As each metal, however, has certain characteristics that differ from the others, the methods used vary slightly with each material. Zinc, as has already been said, is no exception. Once these differences are understood, though, there is no more difficulty with zinc than with any other metal.

The following are some of the peculiarities met with in the laying of all metal roofings.

The most important consideration in laying a metal roof, including zinc, is to allow for the expansion of the metal. All metals expand when heated, though some expand more than others for the same amount of heat. Zinc expands for each 10 feet, in a range of 120 degrees Fahrenheit only one-quarter of an inch. It is for this reason that zinc sheets should never be nailed or fastened rigidly.

One of the most common troubles connected with all metal roofings including zinc is condensation on the underside of the metal roof. Condensation, as you all know, is caused by warm, moist air striking a cool surface. This contact of different temperatures condenses the vapors of the warmer air and changes them into water.

To overcome this trouble, two rules should always be followed: Always see to it that the space under the roof is thoroughly ventilated in order that any temporary condensation may have a chance to evaporate, and, if the use of

the building makes it likely that there will be continual condensation, it is necessary to lay a sheathing of paper under the roof sheet. This will carry off any condensation that collects and it will also act as an insulation which tends to overcome condensation by keeping inside air from striking the cold sheets.

Capillarity, or capillary attraction, is the name given to the influence that causes liquids to be drawn up into very fine openings or crevices.

It is common to all metal roofs in which joints are made by folds without the use of solder, because, when the joints become filled with dust, water tends to work up into the fold and so leak through. It is possible, however, to offset the effects of capillarity by making the folds wide enough or by using sufficient overlap for the sheets to make the joints safe.

Two different metals in contact with the presence of moisture form what may be described as a small electric battery, the action of which causes the wasting away of one or both of these metals. This process is called electrolytic action.

In working with zinc, therefore, care must be taken that no other metals, except lead, tin and aluminum, touch the zinc unless they are well galvanized. In places where this is impractical, such as where the sheet roofing rests on the purlin, the other metal should be well painted.

In extremely cold weather, it is advisable to warm the zinc to 60 or 70 degrees Fahrenheit before attempting to bend it.

Though it is possible to make sharp bends satisfactorily, with the grain, the best results are always obtained by bending sheets across the grain.

In making bends, it is, of course, better to use a wooden mallet than a metal one.

In bending zinc, remember that the most satisfactory bend is the one that is round.

In soldering zinc, the surfaces should be carefully cleaned, and all traces of grease, dirt, oxide, etc., removed. The ordinary "cut-acid" soldering flux used in soldering galvanized iron should be used. This is made by adding to muriatic acid a little more zinc (scrap pieces) than the acid will dissolve. Ordinary "half and half" solder used with a moderately hot iron while the surfaces to be soldered are still moist with the flux has proved most satisfactory.

The iron should not be allowed to become red-hot, nor should it be applied to the zinc longer than is necessary to give a good joint. One quick pass is usually sufficient. The use of a heavy iron is recommended, as the heat can be kept more uniform and is not so quickly lost by surface cooling.

After the solder has hardened remove all traces of acid or flux.

In closing our comments on the peculiarities of zinc, I am reminded that some years ago a chance acquaintance exasperated me by enlarging upon the peculiarities of a friend of mine. My retort to him was: "Yes; he is a human being, even as you and I; he has his virtues and vices, even as you and I; but his virtues so transcend his vices that his friends are always willing to fight for him." And that is the way the zinc men of this country feel about zinc.

Now, let us look at the transcendent virtues of zinc:

It is impossible for us to imagine a material more perfectly adapted to its purposes than is zinc for roofing and roofing accessories.

Zinc is a non-ferrous metal, and consequently can not rust. This, as you know, makes for long life.

Upon exposure to the weather zinc becomes covered with a basic carbonate of zinc. In this natural oxidized state, it forms a roof that is a beautiful silvery gray in color, harmonizing admirably with most finishes used in modern architectural practice. In fact, it is possible to build as beautiful roof from zinc as from any other material. This oxidization, or weather curing, protects the metal, and countless years of exposure will have no further effect upon it.

The oxidized zinc requires no paint, as is always necessary in the case of the more commonly used metals. It can, of course, be painted any color that you wish.

Zinc can not crack like tile and slate, nor warp, curl, rot or burn like wood and substitute materials. In fact, it requires no repairs and can not deteriorate in any way. A square of zinc roof is lighter than a square of any other roofing material. As compared with slate, for instance, it weighs about 1/7 as much.



M. G. Thieman, Re-elected Second Vice-president.

It, therefore, requires a lighter and less expensive under-supporting structure.

Zinc is cool in summer, and forms an excellent protection against fire and lightning. It eliminates all danger from cinders, fire-works and flying sparks.

There is a current, though mistaken, belief that zinc will burn. Zinc is not flammable, and is, therefore, a fire resistant covering for any kind of a building. At a very high temperature, when the fire damage becomes so great as to make any roof forever worthless, it will melt and even evaporize. As you know, tests have shown that metal roofing is a protection against lightning.

A lower rate of insurance, therefore, should be secured on all buildings where zinc or other metal roofings are used.

Zinc when used where fumes are such as would attack metal roofs compares favorably with other roofing metals.

Zinc is recommended for use on the sea shore. Some of the oldest zinc roofs in Europe are on the sands of the Belgium Coast.

A zinc roof can be applied by any one who can put on a tin or a galvanized iron roof. It requires no more skill than is possessed by a man already trained in the roofing business. Zinc is easy to work. It is sufficiently soft to allow

nails to be driven through it without first punching, and it is the least elastic of the roofing metals, excepting lead. Therefore, when it is bent it does not tend to spring back to its former position, as do some of the more commonly used metals.

Zinc is easily spun, drawn and punched, and is a commonly used metal for architectural ornaments. This feature of the business, established in the United States in 1871, has made rapid strides in recent years.

Today there are available for purchase by the trade Batten Sheet Zinc and Corrugated V-Crimp Sheet Zinc in standard sizes; also Zinc Shingles and Rolled Zinc Gutters, Down-spouts, Tile, Formed Ridge Caps, Valleys, Flashings, Ornaments, etc. Full instructions for the application of all these products of sheet zinc are also available.

Zinc is not an expensive material. Its price is about one-half of that of copper, about the same as the best tin plate, and about twice that of galvanized iron in the initial cost. However, these two latter materials are decidedly more expensive than zinc over a period of years, because of the cost of frequent painting and occasional replacement.

The factor of ultimate economy is greater in zinc than in any other roofing material.

These are the qualities that have made zinc the most universally used metal in Europe.

These are the qualities that will bring zinc into use as a roofing in the United States just as fast as the American Zinc Institute can place its virtues before the buying public.

Therefore, it behooves every sheet metal worker in this country not only to be prepared to handle such work when it is offered, but also to advocate the use of zinc in his own community. Who would rather not lead than to be led or to follow?

I am a great believer in now and then putting myself in the other fellow's place. If I were today in the place of each one of you, gentlemen, I would here and now adopt the slogan of the American Zinc Institute, "Make it of Zinc." Then I would go home and advocate and put on at least one zinc Batten, Corrugated or Shingle Roof, with zinc gutters, etc., in my own community, call the attention of my fellow-townsmen to that roof and announce that I was specializing in the best roof on the market today, the Zinc Roof.

The headquarters of the American Zinc Institute are at 27 Cedar Street, New York. There, in the words of our President, Mr. Wolff, is established a Secretary, whose duty it is to devote his entire time to matters pertaining to the use of zinc in every way, to furnish information to the public and especially to guide the sheet metal worker in the use of zinc.

Gentlemen, I am always at your service.

At the end of Mr. Tuthill's address, brief talks were made by F. C. Wallover, John W. Newton, local mine operators, and H. W. Symmonds, president of the Sheet Metal Contractors' Association of Missouri.

Much amusement was caused at the meeting when President Sym-

onds told about seeing a white horse in the Netta mine. Superintendent Potter was appealed to and said if there was any white horse in the mine, or "white mule" either, it had been introduced since the visitors had come to the district. He admitted, however, that the company had a gray mule, and President Symonds supposedly had mistaken it for a horse.

The delegates were then brought back to Joplin and taken through the plant of the Eagle-Picher Lead Company at Smelter Hill.

The afternoon session of the Convention consisted of brief reports by the officers. The annual address of the President, H. W. Symonds, was hopeful and encouraging in its spirit. It is herewith reproduced:

Report of President H. W. Symonds.

Not quite a year ago, to be exact eleven months, our association had its beginning at St. Louis. It is said that if an infant weathers over the first year it lives on and usually succeeds. Some progress has been made, an increase of membership, and as far as I know, no resignations.

In January of this year I made a trip to Kansas City, with the assistance of our Sergeant at Arms, Jule Gerock, added five members to the roll. Considerable letter writing by myself and your Secretary, also with what assistance the trade papers were able to give, we have done as well as could be expected, for the first year.

The Auxiliary has done some good work, but with a little more effort can accomplish wonders by our next convention. There should be a united effort from now on to advance Missouri among the state associations, of which there are now fifteen, six having been formed during the past year.

This great state with its two large cities east and west, with its lead and zinc in the south and its corn in the north, ought to equal at least any state association now in existence. I sincerely trust at this convention you will elect delegates to the National Convention at Indianapolis, that will arouse interest for our state, also all members should attend if possible. The educational features are worth many times the expense.

We are engaged in a business that is second to none; it is at least Fire Proof. Learning more about our own business, sheet metal, furnaces and fireproofing will add to our profits and give us a better standing in the community in which we reside. This also applies to your membership in your local and state association.

In conclusion I wish to thank all who in any way assisted me in the performance of the duties involved in the office of president, which I will always remember, and cherish the honor.

Following the annual address of President Symonds came the an-

nual report of Secretary Otto E. Scheske, in which the same buoyant spirit of confidence in the development of the Sheet Metal Contractors' Association of Missouri was strongly evident. Secretary Scheske spoke as follows:

Report of Secretary Otto E. Scheske.

We in the sheet metal business must get together. There is no other way for us to do this except through association work. The mercantile agencies tell us there have been more business failures in the last 18 months than ever before in their history, and they say there will be more than usual in the near future, they plainly tell us to be careful, and they state the biggest part of the reported failures are the small or middle-classed business men.

Now with this advance information, and business as we all know not any too good at the present time, we must get



Frank B. Higgins, Re-elected Treasurer.

together, talk about the different things, and get one another's ideas. There is not one of us here today that can afford to pass up an opportunity to learn something. We do not know it all, and whenever you come across the man that thinks he knows it all, there is one thing in my opinion that he doesn't know, and the sooner he finds that out the better it will be for himself and everybody he comes in contact with, and the thing he wants to know is, what is keeping him out of the insane asylum.

We think we have accomplished a good deal with this association last year and from all indications we are going to do better this year; we now have members from almost every part of the state. We now have 41 and hope to have that many more next year this time.

Some of the few things we are trying to accomplish are, to promote the sheet metal business, to foster friendship, to get our members to understand the cost of doing business, to teach them to apply their overhead expenses at the right time and place, and to make the Missouri Sheet Metal Contractors' Association a 100 per cent organization.

I believe business is readjusting itself. From reports we gather from all parts of the country it seems that we

have passed the crisis. Now that does not mean we can sit down and wait for business to come to our doors. Those days are passed. In 1919 and 1920 all we needed then was order takers; in fact, we had too many order takers; you did not need to know anything about business then, all we needed then was a man to take the order and see how much he could get for his article; but his day is gone. Today we have got to be up to date and know our business from start to finish.

We have with us today some very able, competent and interesting speakers whom we will hear from during this convention; they will give us talks on the subjects just mentioned.

That concludes the secretary's report and I wish to thank the members for their attendance and especially Mr. L. H. Dorn for the good work he has done, and the Joplin Chamber of Commerce for their assistance.

Unusually clear, helpful, and logical was the address on "Business Building," by E. B. Langenberg of Haynes-Langenberg Manufacturing Company of St. Louis, who has done remarkably good work in developing the Salesmen's Auxiliary to the Sheet Metal Contractors' Association of Missouri. Mr. Langenberg's address is as follows:

Address on Business Building by E. B. Langenberg.

There are certain essentials that are necessary to build business and a rough outline is given to acquaint you with them:

1. *Character.*
 - Demands esteem.
 - Creates confidence.
 - a. Industry.
 - b. Integrity.
 - c. Intelligence.
 - d. Initiative.
 - e. Intensity.
 - f. Inspiration.
 - g. Built through years of toil and effort and yet, so easily destroyed by one dishonest or dishonorable act.
 - Character is a priceless birth-right.
 2. *Ability.*
 - a. To do good work.
 - b. To hold old customers.
 - c. To secure new customers.
 - d. To build for the future.
 - e. To meet your obligations (trade acceptance), etc.
 - f. To limit your credits.
 - g. To collect your accounts.
 3. *Finance.*
 - a. Cash on hand. To cover original investment. To cover expense over a limited period.
 - b. Borrowing capacity.
 - Based on character.
 - Based on business ability.
 - Based on attention to business.
 - Based on payment of bills.
 - Based on buying judgment.
 - Based on inventory whether large or small.
 - Based on relation of overhead to business.
- Who are your customers? Your personal friends? No. The Public—fickle, changing, sometimes stubborn but at all times ready to listen, looking for

the truth, demanding honesty and willing to pay to the extent of its purse. As a whole it is fair in its dealings but woe the man who transgresses the laws of society and by sharp practice seeks to take an unfair advantage and does a wrong to but one of these.

It is like a pebble dropped into a quiet ocean. First a small wave, then a bigger wave until the whole is restless. How a small act is advertised, spreads and in a short time becomes a story that bears no resemblance to the original.

How to win the favor of the public and secure a share of the potential business is a problem that worries many a man. Most worries depress a man instead of stimulating him. What are the possibilities in your town? Any size.

Conditions—

- 5,000 inhabitants,
- 2 sheet metal contractors,
- 5 churches,
- 2 schools,
- 4 hardware and implement men,
- 2 lumber yards,
- 100 stores about as follows:

- 6 clothing,
- 2 shoes,
- 3 jewelry,
- 9 grocers,
- 4 meat markets,
- 2 stationers and news,
- 1 music house,
- 2 racket stores,
- 4 drug stores,
- 4 soft drink,
- 2 pool rooms,
- 3 produce,
- 2 banks,
- 1 hides,
- 2 tobacco,
- 4 real estate,
- 10 insurance,
- 1 building and loan,
- 2 picture shows,
- 2 tailors,
- 2 garages,
- 2 blacksmiths,
- 2 plumbers,
- 2 milliners,
- 4 barbers,
- 2 dry goods,
- 2 junk,
- doctors,
- dentists,
- lawyers.

Do you sit supinely in your shop and wait for something to turn up? Or do you go after business with a vim and enthusiasm that make play of your work, make you go home with a feeling of success?

Start down the list above.

1. 1,200 homes.

They need metal roofs.

They need gutter and spouting.

They need heating plants.

They need stove pipe, wire and cement.

They need metal pots and pans.

They need tanks and cisterns.

Take a different route to your shop each morning and glance at the guttering and spouting along the way.

You know the name of the owner. Call on him that day, or send him a postal. Tell him he will save in the long run by having the work done now. Tell him you use the best materials obtainable, that your work is accurate, complete, substantial and clean. That it will add to the value of the home. That it will save plaster and decorating on the inside.

Use every possible argument you can to secure his order. Be sincere, be truthful and when you secure the order do

all you have promised and then some. Make your agreements clear to both and preferably written.

Should he complain, give the matter your personal attention and adjust the fault free of charge. Collect on completion. There is no shame in demanding immediate payment. Offer a small discount for cash. Don't wait 30 days.

Put his name on your mailing list.

Each day you add two or more jobs and the names to your mailing list. You are building good will for the future, an intangible, abstract something in human nature that responds in dollars and cents where least expected.

Start a Mailing List from the

Telephone Directory,

Personal friends,

City Directory,

List of farmers on various routes,

Personal calls.

How to use mailing list:

1. Index arranged alphabetically. A record of each transaction on back such as:

| | | |
|-------------|---------|---------|
| Gutter | \$12.00 | 2-12-22 |
| Furnace | 350.00 | 9- 1-22 |
| Metal Roof. | 200.00 | 6- 1-22 |

2. Index to be divided into 30 days. Divide the cards equally. Each month send a card or letter. So many each day.

Divide the year into seasonal work such as:

January—Indoor repairs, pots and pans.

February—Smoke pipes for stove or furnace.

March—Guttering and spouting.

April—Tanks.

May—Furnaces for new house. Take down stoves, oil and store at so much per.

June—Troughs for farmers. Bin linings of metal.

July—Metal roofs.

August—Furnace and stove repairs.

September—Roofs ready for winter.

October—Metal ceilings.

November—Repairs of all kinds.

December—Heat regulators and other accessories to heating systems.

Use 2-cent postage and use it all.

Almost every factory or jobber can and will supply you with printed matter free of charge to add to your letter. Ask for it and use it.

Now go back to the town mentioned above. Every home is a prospect for something in metal. Let them know that you have what they want.

Here's a list of possibilities in your town:

Schools—Heating and ventilating systems, room heaters.

Churches—Metal flower boxes, cornices, guttering, etc.

Hardware Stores—They have inquiries about metal products that have to be made to order. Make arrangements to handle their work.

Lumber Yards—Can refer farmers to you for troughs, tanks, etc.

Dry Goods Stores—Need window frost drains. Want ornamental fronts, metal ceilings.

Take the list and think out for yourself what each business needs from you. Let them know you have it through your monthly letter or bulletin. Keep one jump ahead of your competitor.

Promise service and give service. Be prompt. Be courteous.

Keep your word. Make good. If a customer kicks, he's right.

A kicker talks two ways, for and

against. Keep him talking for you. He's an asset.

At the close of the year figure the results of your efforts in dollars and cents. It will show on your books.

The satisfaction of having done your best and the esteem of your townsmen will be your reward.

And the foundation for that "pursuit of happiness" which is guaranteed by the Constitution of the good old U. S. A.

Friday evening the delegates were entertained at a banquet in the Connor Hotel as guests of the Missouri Salesmen's Auxiliary.

Saturday, April 29, 1922.

The matter of overhead expense was the main subject of discussion at the closing session of the convention, which began at 9:00 o'clock Saturday morning.

It was followed by reports of committees and the election of officers.

All the officers were re-elected, as follows:

President: H. W. SYMONDS, St. Louis;

1st Vice-President: L. H. DORN, Joplin;

2nd Vice-President: M. G. THIEMAN, Concordia;

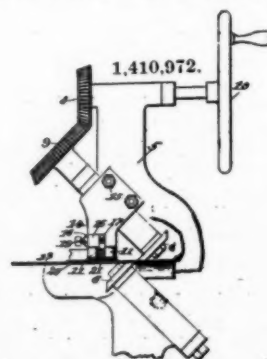
Secretary: OTTO E. SCHESKE, St. Louis;

Treasurer: FRANK B. HIGGINS, St. Louis.

After the adjournment of the Convention, the delegates were taken on an automobile ride through the mining district of Joplin so that they might acquire a comprehensive idea of the extent of the great zinc and lead industry in that district.

Sheet Metal Shears Are Patented.

Clinton DeWitt Wagner, Cedar Rapids, Iowa, has secured United



States patent rights under number 1,410,972, for the sheet metal shears described herewith:

The described method of and means for producing duplicate sheet metal forms with rotary shears, which comprises a template provided with an upstanding guide-rib, guide-rollers with parallel axes

to straddle said guide-rib, and a parent sheet secured to said template, the rollers being located laterally of the cutting line, and parallel to the line of least deflection in making the cut.

Shows Method to Be Followed in Repairing Breaks after Cleaning Automobile Radiator.

Visible Leaks and Breaks Should Be Soldered Up Before Air Test Is Applied in Order to Make It More Effective.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by
E. E. Zideck, New York City.

TWENTY-SEVENTH ARTICLE.

THE radiator arriving at the testing tank is (a) out of its shell; (b) cleaned of all mud; and (c) cleaned inside and outside of oxide and other foreign substance.

In this condition, the radiator will show leaks and breaks without difficulty.

Visible leaks and breaks should be soldered up before the air test is applied.

These breaks, especially if they are in the tanks and the heavier parts of the radiator; can be repaired easily by following these instructions:

1. Find the breaks, and mark them, using a sharp-point steel for marking.

Look carefully over the radiator to be sure that you have marked every stained (leaky) seam or lap, and every break in the metal or the soldered joints which need re-soldering.

2. Use a good scraper and muriatic acid in addition, to clean the break in the metal or its joints you want to solder.

3. Apply flame to the break, using acid freely upon the heated up metal, this process melting the old solder and re-tinning the joints.

Have a piece of pointed wire or a suitable tool to remove the dirt that boils out with the melting of the old solder.

4. Try to melt out all of the old solder contained in the broken lap, seam or joint, never melting on dry metal, but always applying cut acid

or soldering flux to wet the metal with.

5. Prepare all leaky breaks you have found in the radiator in the way described.

Then, when you have all prepared in that manner, and every break is sufficiently clean to admit of what is called "sweating" soldering, use brush or wet rag to do away with whatever acid and dirt there is left upon the metal.

6. For re-soldering inlets, outlets and other iron parts, use cut acid. Soldering flux will do in re-soldering all other metals than iron, particularly if they are light metals.

7. Use flame to heat up the iron and heavy metal parts to be re-soldered. When heated up sufficiently well, exchange flame for coppers; and finish up with these.

8. Solder must melt and flow into the broken lap, seam or joint. Use cut acid or soldering flux freely, as the solder will then melt and flow in more easily.

Do not pile solder over the break, except where there is a hole which you have to cover up, but then, a patch of brass or copper should be used to cover it.

9. All soldering done on the heavier metal parts of the radiator should be done with fairly hot coppers.

Solder must melt under the copper and flow into the lap or seam. Edge-soldering will not hold for long.

Only the kind of soldering known

as "sweating" will be strong enough to withstand the strain.

After having re-soldered the visible breaks and leaks in the radiator, rubber stoppers are applied for plugging the inlet, the outlet, and the filler tube.

The latter can be made air-tight by screwing down the cap; by using a new gasket eventually.

The overflow pipe is used to connect on to the rubber hose of the air-pressure-line.

When all openings into the radiator have been plugged, a 5-pound air pressure is regulated and let in.

If there are leaks left, the escaping air will whistle and the leaks can be detected by tracing the sound.

If no sound is heard, and the indicator shows the air escaping, there probably is a big leak somewhere, so big in fact, that the air is escaping freely without being forced into the opening.

Only the small leaks that let out air compressed by the smallness of the opening do whistle and sound.

The big leak will be found by holding the hand close to the part suspected of leaking and feeling for the stroke of the escaping air.

Where the repairing is being done by the "dry process" (having no water-submersion-tanks), all the leaks must be found by either sound, feeling for the stroke of the escaping air, or by applying a small brush wetted in water to seams, laps and joints suspected.

The brushed on water will bubble up if any of the air is coming out there.

With neither the sound of the escaping air or the feeling for the stroke of it leading up to the discovery of leaks, the brushing on of water must be resorted to as the only effective way of showing up the remaining leaks.

Filling the radiator with water and watching for leaks will not always show them up, even if air-pressure should be added to force out the water.

The leaks might be so small that they will be stopped by the dirt in the water entering them.

In the "dry process" of testing, the pressure indicator remaining stationary at 5 or more pounds of pressure is the best test possible.

In the majority of shops, however, water-testing-tanks are in use. This is called the "submersion test."

It should be resorted to only then, when the visible leaks and those detectable by either sound or feeling for the air stroke methods have been stopped.

The wetting of the radiator by submerging it in the water-tank will spill much water over the floors and make soldering upon the wet metal less easy.

In many cases where there are large leaks in the submerged radiator the water enters the inside of

it and interferes with the accuracy of the final test.

Water submersion will show the smallest of leaks by the escaping air causing the water to bubble.

These bubbles will show right above the spot that leaks.

The leaky spots are best marked while the radiator is laying in water and the bubbles can be traced accurately to where they originate.

A sharp steel point is best for marking them.

By lifting the radiator up enough so the leaky spot is covered just enough with water to continue bubbling, the marking can be done upon the metal showing the bubbles.

While at it, all of the leaky spots should be found and marked. And all of the marked spots should be

soldered while the radiator is out of water.

If no leaks can be detected by air bubbles showing in the water, the air-pressure might be increased to 10 pounds.

Leaving the radiator in water for at least two minutes under the 10 pounds test, and still no bubbles appearing, the radiator is to be considered tight and restored.

Usually the 10-pound test will show many smaller leaks not observed before.

Stopping these leaks by marking them while the test is applied and soldering them all at once, re-testing continually until no bubbles show any more, is the right way to complete the job.

(To be continued.)

Airships and Wireless Telephony Are More Romantic and Profitable than a Handmade Copper Tea-Kettle.

The Days of Hand Production Are Gone and the Modern Sheet Metal Contractor Must Use His Brains More than His Hands.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio

I HAPPENED to spot Henry Oltymer passing by the hotel last Sunday, and stopped to chat with him.

Henry is about sixty years of age and as spry an old man as I know. We talked about nothing in particular, but the old man dropped a word which is the cause of this article.

He told me to step into his shop in the morning because he wanted to show me something that would interest me. So I stepped in the next morning, and found the old man working on a copper tea kettle.

"What do you think of it?" he asked with some pride.

I saw at a glance that it was a handmade affair, neat in design, and as pretty a piece of hand work as I ever saw. It showed real mechanical ability and workmanship. The old man had put into this tea kettle the very best that was in his forty years of experience.

"Mr. Oltymer," I said with ad-

miration, "this piece of work is the prettiest I have ever seen. It really is a masterpiece. What is the idea of making it by hand?"

"Well," he answered with a smile, "you know my boy Jimmie is to be married next week, and I want him to have this for a wedding present from me. I could think of nothing else that would please him any better."

Just then Jimmie came in, and the three of us sat down to discuss Jimmie's wedding. I had known the boy for ten years, and was, of course, interested in this event.

"Yes," the old man said, "I am going to step out of this business the day of Jimmie's wedding, and give this shop to him. This will give him a better start than I had when I was his age, and," looking at the tea kettle, he added, "this kettle will be the last job I shall do in this shop."

"That's right," Jimmie verified, "this dump will be mine, and then

dad will see what progress and modern ideas are. I shall build a new business out of this old place. I am in for modern business methods, and if dad don't interfere, I shall have one of the best shops in this burg."

I congratulated Jimmie on his ideas, but the old man interrupted me by saying:

"Jimmie boy, better follow out in your daddy's steps. Let experience be your teacher. Learn in a natural way. Leave these new-fangled ideas alone, and do as I did. Old man experience is your best teacher. Get the hard bumps like I got them and you will be a real tinner."

"Just look at this tea kettle," he added, with pride, "there is not a man in this county who could begin to lay it out leave alone making it. Eh boy?"

"Dad, you do not understand business as it is done today," said Jimmie with the respect due an old

father deserving of his regard.

"I know that, son," the old man answered dubiously, "but I am afraid that you will just ruin the work of your daddy that represents a lifetime."

"Mr. Oltymer," I spoke up, "I am inclined to think that you do not see the world of business as it really is. Your old time ideas are all right, but these days one must be up to date, and meet competition squarely in a modern manner."

"Modern manner, my eye!" the old man answered, "I have been a successful man, I own my own home, and I am still alive and happy. I have customers that have been in this little book," taking a small book out of his vest pocket, "for many years, and they are all good, reliable customers."

"Mr. Oltymer, I have known you since Jimmie was fifteen, and we have been old friends for years, so I can talk plain to you. You know I have Jimmie's interest at heart, and I want to see him be a better success than you are. What have you got outside of your home, which is worth three thousand dollars at best? Just what is that success you are talking about? These old time customers will soon die maybe, and then Jimmie will have to deal with new and younger people who will demand real modern methods. You are a skillful hand worker, and take pride in your craft.

"Take this tea kettle you have spent time on. If it were not for the sentiment of the thing, I would say that you were foolish to have spent the time on it. From a business point of view, it is entirely too expensive and impractical. Your experience in life has been gathered by the route of hard knocks, and it has taken you a lifetime to get it together.

"Now you are about sixty years of age, and you are too old to use it. If you were about twenty years younger, with the experience you have now, you would be able to do wonders, and lay by a lot of money for old age. But as you are, you are an old man with really nothing

to show but a little home that would cost a small fortune to remodel so it will be a real residence.

"Old friend, you are under the wrong impression, and I should hate to see Jimmie follow out in your footsteps. If he does as you do, or advise to do, Jimmie will become an old man before he will be able to prosper on what he has learned."

The old man thought and thought, and finally ventured to say:

"I guess you are right in some of the things you say, but I have been happy all my life and I want my boy to be just like that."

"My friend," I answered the old man, "Nowadays, in order to be happy, one must be prosperous. One must have real business methods, and meet competition square and well prepared. One does not need to be a skillful tinner to be a good sheet metal success.

"In these days, one can buy all the skill he wants for about a dollar an hour. What Jimmie wants is a thorough knowledge of business methods, and be able to figure and estimate at a profit. It does not take overalls and dirty hands to get a good contract. It takes real brain power to succeed. Jimmie must have a bookkeeping system and a typewriter. He can not use his vest pocket for an office. The vest pocket today is used for a card case not an office."

"That is just what I wanted to make daddy understand all the time," Jimmie spoke up, "but he would not listen to me. What I wanted to do was to send Amy, my future wife, to business college and have her take charge of the office at a salary the same as I would have to pay someone else, but he said that it would not pay me to do so. I want to run an ad in the newspaper, use the movies for publicity, have a mailing list for getting business, and a lot of other things, but he says that I am a fool for wanting these new-fangled ideas. But I know I am right."

The old man sat silent, and smiled and smiled. It seemed so foolish to him to want to be up to date.

"Jimmie," I said, "You are absolutely right. Get on the right track and be modern all the way through. Study the experiences of others, and learn in one day what it has taken others years to know. Get all the knowledge you can through books. Forget the old foggy methods that you were brought up to, and start anew.

"Life is too short for you to find out by experience the pitfalls of business. You shall begin to use your brains as soon as you become the owner of this shop, and forget the tools.

"Use brains, and buy muscle is the motto of all successful business. Your dad means well, but he does not realize that things are forty years ahead of this very shop. You will have to remodel this front and put in a real office. Have a show room where you can show a furnace and other things. Advertise, and use the mails. That is modern business.

"When you get to be sixty years of age, you will be a rich man, and be able to take your wife by the hand, sit back in comfort, and see the rest of the world go by. If you are the man I think you are, you will retire at fifty, a smiling and happy young old man.

"Go to it, Jimmie, and use your modern ideas. You are right, and when a man is right, he is a success. Remember that life is fast and short. The man who does the most in the least amount of time, has longer to enjoy his old days. Success to you, Jimmie, and more power to you every day."

The old man sat listening. There was a faraway look in his eyes, a tear lurked in each one. Arising from his chair, he looked at Jimmie, and looked at me. Then he took each one of our hands in his own trembling ones, and in a shaky voice said:

"Boys, I guess this old world do move."

Mr. Sheet Metal Man, if you have any old foggy ideas, forget them. They are no good, and only mean poor old age, and nothing else.

Progress has brought to the world

telephones, telegraph, electric lights, wireless, airships, and modern business methods.

Keep up, or stay behind. You will either laugh or cry at the choice you have made.

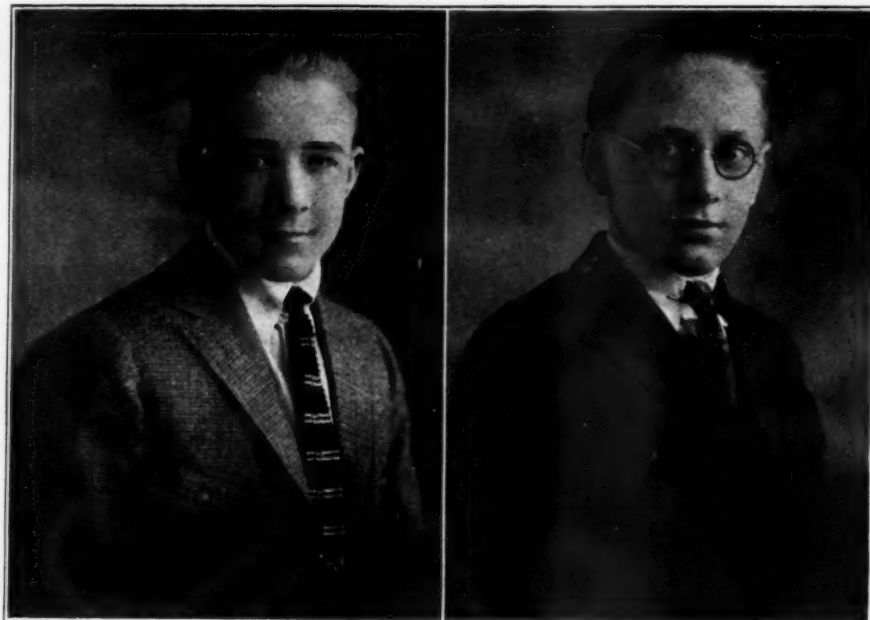
Michigan Boys Win Place in National Convention.

As a result of a hard contest in skill and knowledge, two Michigan boys won a place in the great meeting of sheet metal contractors which is to convene this month in Indianapolis.

The pictures are those of Basil Melville of the East Intermediate school and Elton Heglund of the West Intermediate School of Jackson, Michigan.

These boys have been selected to represent their respective schools at the National Association of Sheet Metal Contractors' Convention and Exposition to be held in Cadle Auditorium, Indianapolis, Indiana, May 15th to 19th.

The boys are to work in the model shop during the convention.



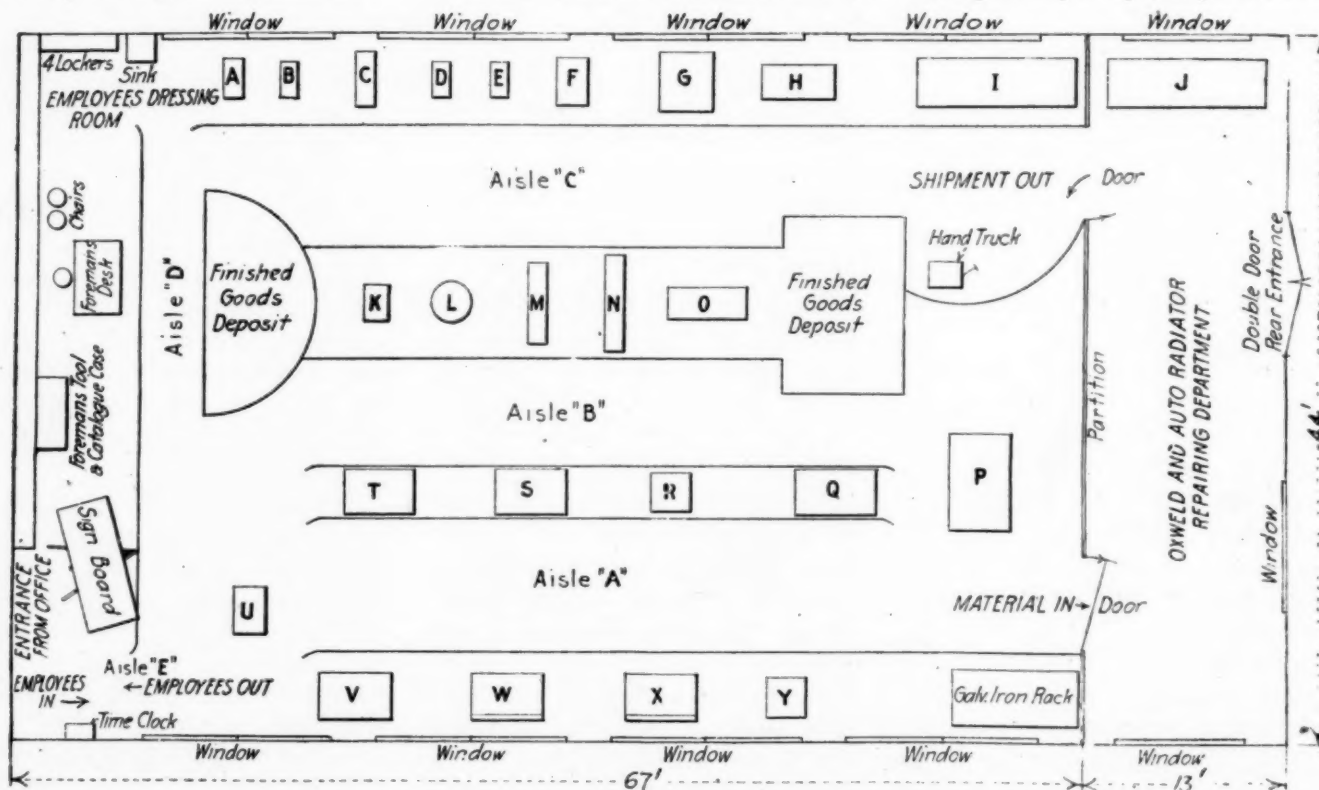
Basil Melville and Elton Heglund of Jackson, Michigan, Winners of Competition to Represent Their Schools at National Sheet Metal Convention.

Through their superior ability and workmanship these boys won this opportunity in competition with the other boys of the Sheet Metal Classes.

The plan of sending these boys to the Convention has been made

possible through the interest and cooperation of the Sheet Metal contractors of the city with the Sheet Metal Departments in the schools.

The total expenses of the boys, while attending this convention are being defrayed by the Jackson Lo-



FLOOR PLAN OF MODEL SHOP AT NATIONAL SHEET METAL CONVENTION, SHOWING ARRANGEMENT OF MACHINES AND BENCHES

A, turning and wiring machine; B, crimper; C, seam closer; D, seam closer; E, elbow edger; F, notching machine bench, gang punch; G, elbow shear; H, folder and brake on legs; I, cornice brake; J, power cornice press; K, beader on floor pedestal; L, holdall machine; M, groover on pedestal; N, groover on pedestal; O, former on legs; P, shear with side and shelves; Q, shear with gauge arms; R, throatless shear; S, machines mounted on machine bench; T, machines mounted on machine bench; U, angle shear and punch; V, soldering bench; W, lay out bench; X, stake bench; Y, tin plate rack.

cal organization.

The Sheet Metal work in the Jackson Schools was installed through the influence of the Jackson Sheet Metal Contractors' Association.

The course of study in the schools consists of the making of kitchen utensils, blow pipe and furnace construction, eave troughing, cornice construction and problems involving triangulation.

The work of the West Intermediate is under the supervision of Fred L. Barnum and that of the East Intermediate under the direction of Deyo B. Fox.

Patent Rights Are Granted for Automobile Radiator.

Under number 1,410,356, Edgar P. Wolf, Racine, Wisconsin, assignor to Perfex Radiator Company, Racine, Wisconsin, a Corporation of Wisconsin, has secured United States patent rights for the automobile radiator herewith depicted:

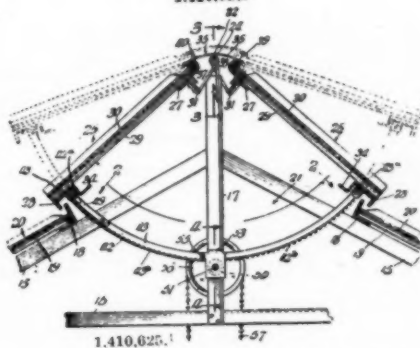
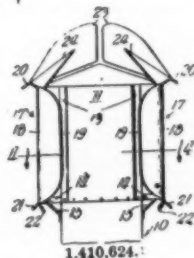
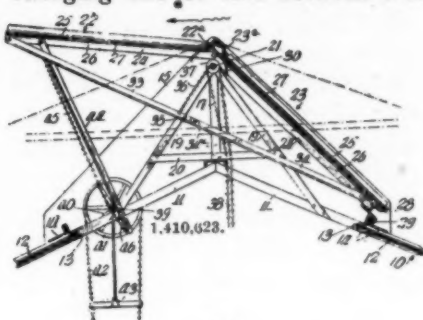


In a radiator, the combination of a pair of water tubes having corrugations along their sides facing each other, said corrugations comprising rounded bottom portions and flat projecting portions, said round bottom portions registering to form a plurality of circular air passages horizontally extending from front to rear, each of said circular air passages having a single individual baffle member therein, each of said baffle members comprising a strip of metal twisted in helical form to cooperate with the enclosing circular walls of its respective air passage for rotating the air passing therethrough.

United States Patents Are Granted for Ventilators.

Under numbers 1,410,623, 1,410,624, and 1,410,625, Joseph Sylvan, Chicago, Illinois, has secured United States patent rights for the ventilators illustrated and described herewith:

1,410,623.—A ventilator of the kind described, comprising in combination with a means providing a ventilation opening, a pair of oppositely arranged, angularly disposed sections, normally closing said opening, said sections being pivoted at their adjacent margins on a horizontal axis spaced above said ventilation opening and being capable of a swinging movement in a vertical plane away from and toward said ventilation opening, means for swinging one of said sections into



its open and closed positions, normally folded bars, having a hinge-joint connection at their inner ends and connected at their outer ends to said sections, said bars unfolding in the opening movement of said first sections and straightening out into alignment and rigidly connecting said sections together so that when said first named section is swung into its closed position, the other section is swung into its open position, and means for breaking the joint between said bars.

1,410,624.—A ventilator for roofs, skylights and the like, comprising a stem having oppositely

disposed side openings, a top for said stem having opposite side extensions in line with the axis of said side openings, opposite floor plates extending outwardly from said stem, at the bottom of and in line with the axis of said side openings, a brace member fixed to said top to said depending end extensions including a central eye and depending end extensions, upright shields spaced outwardly from said openings and normally arranged in parallel relation and at a right angle to the axes of said side openings, said shields being pivoted at their top to said depending end extensions, pivot pins connecting the bottom ends of said shield to the ends of said floor plates, arms extending inwardly from said shield and into said stem, and a pendulum suspended from the eye of said brace member and operatively engaged with said arms.

1,410,625.—A ridge ventilator construction of the kind described, comprising in combination with means providing a ventilation opening, oppositely arranged angularly disposed ventilator sections normally closing said openings, said ventilator sections being pivoted at their adjacent margins and being capable of a swinging movement away from and toward said ventilation opening, and an operating mechanism for swinging said sections into open and closed position, said operating mechanism including parts permitting either section to be swung individually or permitting both sections to be swung simultaneously, after one of said sections has been swung into a fully opened position.

Selling Through the Jobber Is the Most Economical Way.

Although there are some advantages in selling direct to the retailers, it is always a serious question whether or not an advertising manufacturer should adopt this method, says Edwin Bird Wilson, president Edwin Bird Wilson, Incorporated, New York City. He argues as follows:

If he proceeds on the mere theory that marketing expenses will be

smaller because of the elimination of a middleman, he is likely to be grievously mistaken.

The marketing functions of assembling articles at convenient places and holding them for prompt delivery to retailers; of tying up capital, advancing credit, and making collections; of splitting large lots up into small units; of sending salesmen to thousands of retailers—these have to be performed just the same; and the chances are that it will be more expensive for the individual manufacturer to develop the necessary sales organization, and accounting and collecting machinery, to do these things himself, than to leave them to jobbers who combine the outputs of hundreds of manufacturers, and perform the marketing functions through their own organizations.

In other words, if a manufacturer decides to do away with jobbers and sell direct to retailers, he must generally manufacture for stock, and thus keep more capital tied up in finished goods; he must often have branch offices and warehouses; he has to have a great many more salesmen and has more accounts to collect; his financial and merchandising risks are apt to be greater; and he has to sell goods in smaller quantities, and thereby has greater packing and shipping expenses.

It is only in certain circumstances that the manufacturer can afford to undertake these selling expenses—such as when he has a very large output, or perhaps a variety of articles to market; or when he has a specialty that jobbers can not sell satisfactorily; or when his goods are perishable, so that special facilities and expert handling are necessary (as in the meat packing industry). Although there are other considerations which may make direct sale (even the ownership and operation of retail stores) desirable and economical, the great majority of manufacturers in most lines of business still find the jobber the most economical channel of distribution.

With worthy wares we will win.

Notes and Queries

"Pyrox" Spraying Compound.

From Reiche Brothers, Naperville, Illinois.

Please advise us where we can obtain "Pyrox" spraying compound.

Ans.—It is manufactured by Bowker Insecticide Company, 49 Chambers Street, New York City,

Compressed Sal-Ammoniac.

From Hall and Carpenter, 518 and 520 Race Street, Philadelphia, Pennsylvania.

We are desirous of knowing the name of manufacturers of Compressed Sal-Ammoniac in small cakes of two ounces each.

Ans.—Special Chemicals Company, 397 Central Avenue, Highland Park, Illinois.

Galvanized Conductor Hooks.

From Southwick Metal Company, 1913 State Street, Granite City, Illinois.

Please let us know who manufactures three, four, and five-inch wrought galvanized conductor hooks.

Ans.—Milwaukee Corrugating Company, Milwaukee, Wisconsin; Vaughan and Bushnell Manufacturing Company, 2114 Carroll Avenue, Chicago, Illinois; Wheeling Corrugating Company, 2547 Arthington Street, Chicago, Illinois; Friedley-Voshardt Company, 733 South Halsted Street, Chicago, Illinois; Robertson Brothers Manufacturing Company, 5401 Western Boulevard, Chicago, Illinois. W. C. Hopson Company, 516 Ells Avenue, Grand Rapids, Michigan, and Berger Brothers Company, 237 Arch Street, Philadelphia, Pennsylvania.

Brass Tags.

From H. E. Hartman, First Avenue and Fifth Street, Vinton, Iowa.

Kindly inform me who manufactures brass tags.

Ans.—Meyer and Wenthe, 30 South Jefferson Street; and Wilcox and Harvey Manufacturing Company, 564 West Randolph Street; both of Chicago, Illinois.

Ans.—Art Metal Radiator Cover Company, Oakley and Oakdale Avenues, Chicago, Illinois.

Address of Kelsey Heating Company,
From F. W. Hacker, 504 East 43d Street, Portland, Oregon.

Kindly furnish me with the address of the Kelsey Heating Company.

Ans.—They are located at Syracuse, New York.

Flat Terra Cotta Roofing Tile.

From Harry A. Bailey, 54 West Main Street, Newark, Ohio.

Please advise me who makes flat terra cotta roofing tile.

Ans.—Murray Roofing Tile Company, Cloverport, Kentucky; Mound City Roofing Tile Company, 3301 Morganford Road, St. Louis, Missouri; and Valley Cornice and Slate Company, Limited, Saginaw, Michigan.

Address of Roberts and Mander Stove Company.

From Schlick Sons, 1154 North Clark Street, Chicago, Illinois.

Kindly tell us where the Roberts and Mander Stove Company is located.

Ans.—11th and Washington Avenue, Philadelphia, Pennsylvania.

Row and Motor Boats.

From Seven Oaks Springs Company, Lexington, Kentucky.

Who makes row boats that will carry from four to six persons? Also who makes motor boats.

Ans.—Michigan Steel Boat Company, Kercheval and Connors, Detroit, Michigan; Illinois Boat Company, 4032 North Rockwell Street, Chicago, Illinois; and Everett-Hunter Boat Company, McHenry, Illinois.

Camping Tents.

From Seven Oaks Springs Company, Lexington, Kentucky.

Kindly inform us who makes camping tents that will hold from two to four cots.

Ans.—George B. Carpenter and Company, 440 North Wells Street; Driver Brothers, 1301 West Harrison Street; and J. W. Johnson Company, 1231 Macedonia Street; all of Chicago, Illinois.

Ecuador fixed the rate of exchange—and, as a consequence, the rate of exchange has nearly fixed Ecuador.—The Credit Monthly.

Descriptive Index and Guide to New Patents.

Improved Devices Which May Save Labor in Your Shop
or Add Another Source of Income to Your Retail Store.

1,409,711. Nail set or center punch. Alfred Hanley, New York, N. Y. Filed Dec. 6, 1921.

1,407,110. Wrench. Frank C. Wutke, Chicago, Ill. Filed Jan. 11, 1921.

1,407,152. Wrench. Edmund L. Hazard, Hollister, Idaho. Filed Mar. 3, 1921.

1,407,179. Revolving ventilator. John W. Tidwell, Tulsa, Okla., assignor of one-half to James Fitz Gerald, Tulsa, Okla. Filed June 26, 1919.

1,407,210. Damper seat. Elbert A. McSpadden, Crawfordsville, Ind. Filed Dec. 29, 1919.

1,407,237. Shovel. Abel Thompson and Jesse Atkinson, Roland, Iowa. Filed Apr. 1, 1921.

1,407,366. Process for reenforcing thin metal. Edward M. Atkinson, Portland, Ore. Filed Aug. 3, 1920.

1,407,428. Radiator. Anthony V. Knoll, Davenport, Iowa. Filed Apr. 26, 1920.

1,407,528. Wrench. William Gordon, Union, N. J. Filed Aug. 30, 1919.

1,407,540. Metallic Fencepost. Charles Holsinger, Kendallville, Ind. Filed July 12, 1919.

1,407,618. Washing machine. John C. Aker and Mark C. Williams, Duluth, Minn. Filed Feb. 23, 1921.

1,407,632. Fruit-jar opener. John H. Burck, Albany, N. Y. Filed June 24, 1919.

1,407,641. Nail. Jerome A. Cross, Fultonville, N. Y. Filed May 27, 1920.

1,407,710. Device for applying, removing and sealing jar covers of Mason jars. Joseph T. Tillman and Philip Schweich, Minneapolis, Minn. Filed Mar. 5, 1921.

1,407,722. Electric soldering iron. William A. Braun, Dover, Ohio. Filed Oct. 22, 1919.

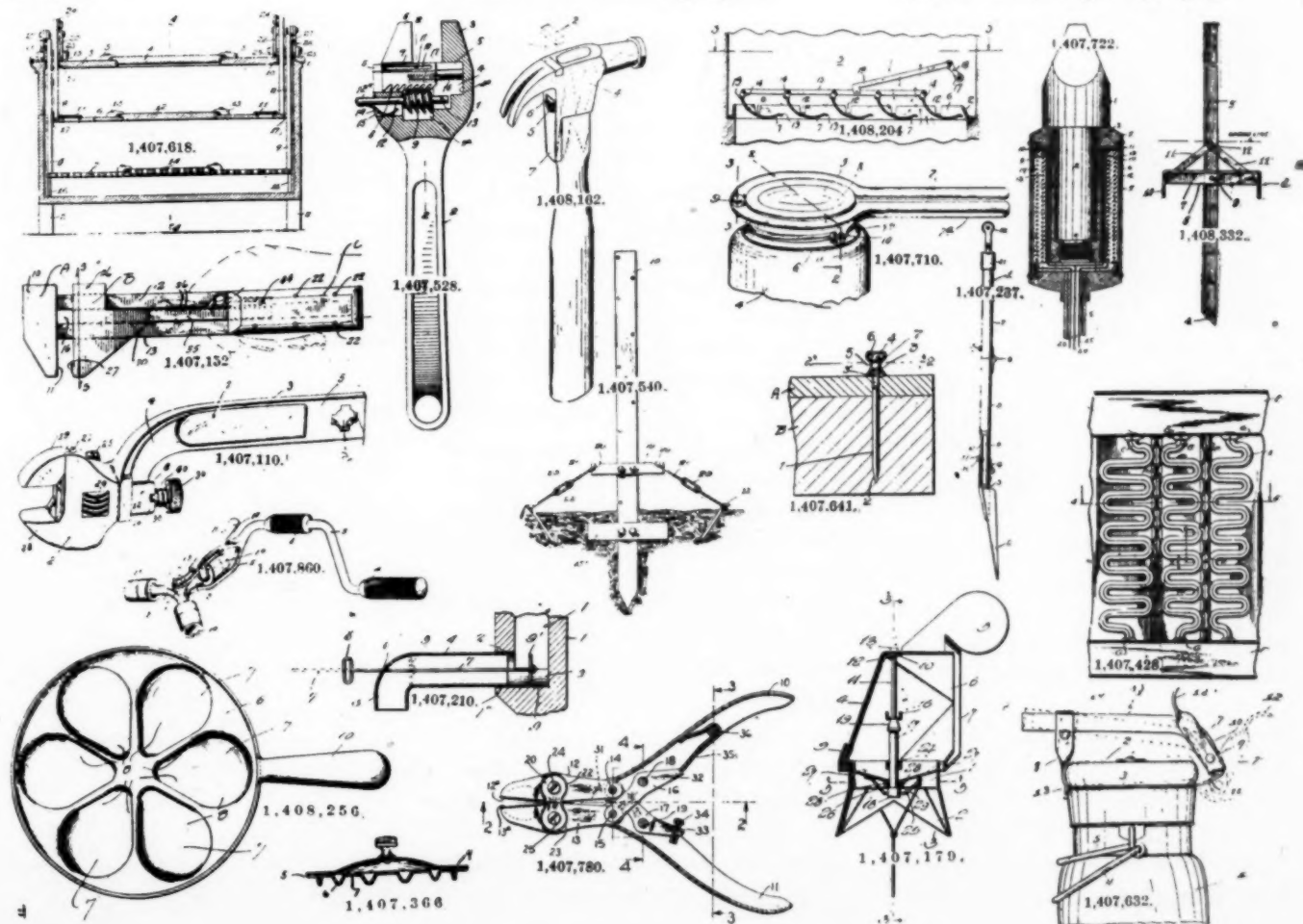
1,407,780. Hand tool. William A. Bernard, New Haven, Conn., assignor to The William Schollhorn Company, New Haven, Conn. Filed Feb. 28, 1921.

1,407,860. Multiple socket wrench. Paul E. Hawkinson, Minneapolis, Minn. Filed Nov. 22, 1920.

1,408,162. Hammer. Joseph A. Bartosz, Salem, Ore. Filed Oct. 4, 1919.

1,408,204. Damper. Carl M. Jensen, Oakland, Calif., assignor, by mesne assignments, of one-half to Leonard D. Frazee, Oakland, Calif. Filed Mar. 7, 1919.

1,408,256. Cooking utensil. Mary Johannah Boehl, Cheney, Wash. Filed Apr. 19, 1919.



Review of Conditions in the Metal Markets.

General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

COPPER ADVANCES TO THIRTEEN CENTS.

At the beginning of the week, the price of copper advanced to 13 cents per pound as a result of an increase of $\frac{1}{8}$ cent by interests in the outside market.

The large producers took this step early last week, having sold the quota set aside for the month, but the outside market continued to sell at 12 $\frac{7}{8}$ cents.

With Monday's developments, however, electrolytic is now firm at 13 cents delivered through May, June and July.

There seems to be a steadier though slow increase in demand as distinguished from the periodic buying spurts.

In some quarters it is estimated that the production of refined copper in the Americas will not exceed 1,200,000,000 pounds and reclaimed metal 350,000,000 pounds, while foreign and domestic consumption during the first four months of this year have been at the annual rate of 1,800,000,000 pounds.

Inasmuch as there is a continued increase in business in finished copper and by-products, an increased consumption and expansion in demand in the near future are expected.

It is believed that the Greene-Cananea Copper Company will resume in July.

Under normal conditions, this company can produce 50,000,000 pounds of copper annually, and at the present time is spending \$1,000,000 in alterations to its smelter, which should add more than 500 tons per day to its capacity.

In the outside market, several inquiries have come from the interior but prices bid were too low to result in business.

Brass mills in the Connecticut Valley have followed wire drawers into the market.

Stocks of brass scrap are being depleted and probably will be exhausted in the next sixty days.

Consumption of copper is expected to increase this month and next and it is estimated that with scrap supplies light the melting of virgin copper will be increased upward of 10,000,000 pounds a month.

Most of the foreign orders continue to come from Germany and France, shipments to Holland being indirectly to Germany.

In the past few days some British inquiries have resulted in business and shipments have been made to Belgium as well as to Rotterdam and Manchester.

Tin.

Spot supplies of tin are somewhat abundant. The consequence is that early deliveries have been offering at concessions of $\frac{1}{8}$ to $\frac{1}{4}$ cent under future shipments.

This condition of the market must not be confused with the state of the total visible supply of tin.

According to the statistics compiled by the New York Metal Exchange the world's visible supply of tin at the end of April amounted to 22,017 tons which is a decrease of 336 tons as compared with March 31.

The Straits shipments in April were fairly large, 5,350 tons, which makes a total of 19,490 tons for the first four months of the year or about on a par with normal times.

In spite of these large shipments the visible supply of tin is 3,200 tons less than it was at the beginning of the year, reflecting the heavy deliveries into consumption both here and in Europe.

Lead.

Generally speaking, producers of lead have adopted the policy of selling on the basis of the average price for the month of shipment.

The market continues firm with a likelihood of increase of prices

on account of the strong position of the metal and the general scarcity of the ore in the United States.

Solder.

Solder prices in Chicago remain unchanged.

The quotations now in effect are as follows:

Warranted, 50-50, per 100 pounds, \$21.50; Commercial, 45-55 per 100 pounds, \$20.00; and Plumbers', per 100 pounds, \$18.75.

Zinc.

Reports from Joplin indicate that sales of zinc ores reached record proportions the past week when over 11,000 tons of zinc ores were purchased by the ore buyers.

Sales were for the most part on an advanced market, settlements being reached on the basis of \$29 to \$30 for the largest tonnages but a very considerable amount of high-grade ores bringing \$31 base.

One of the largest purchases was 2,700 tons by a single concern and was taken from the largest piles of surplus stocks in the field.

Coming at the month end when it is usual to see a tendency to hold down prices instead of increase them the movement upward in the market was an optimistic one and marked the best weekly trading in the ore market for many months.

Sheets.

So strong is the demand for sheets in the Chicago district that the chief independent interest here is booked practically three months ahead.

In the Pittsburgh district the sheet mills are getting back some of their customers in blue annealed sheets, customers they lost recently when plate mills took many orders for the heavier gauges to be rolled plate mill style, at prices the jobbing mills would not consider, down to 1.30 cents.

For this drift back there are two reasons, the higher prices the plate mills are now demanding and the difference in quality.

According to jobbing mills, their annealed and roller leveled product is much superior in quality to the usual product of the plate mills.

Tin Plate.

As many consumers have been anticipating their requirements by from four to six weeks, the usual Summer relaxation in pressure on tin plate mills for deliveries is likely to come somewhat earlier this year than usual, but it is not expected to be extensive, and there may be but little decrease in actual production, except for the hot period in July and the fore part of August.

The regular demand, outside of that against the canning crops, will presumably continue steady right along.

As to the canning crops, reports now are that they will be even heavier than was recently estimated.

According to precedent there would be a slowing down in production late in the year, but the mills will no doubt endeavor to encourage consumers to anticipate the following year's requirements, as they did the past Winter and with considerable measure of success.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$13.50 to \$14.00; old iron axles, \$19.50 to \$20.00; steel springs, \$13.25 to \$13.75; No. 1 wrought iron, \$12.00 to \$12.50; No. 1 cast, \$13.50 to \$14.00 all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light coppers, 7¼ cents; light brass, 4 cents; lead, 3¼ cents; zinc, 2 cents; and cast aluminum, 9¼ cents.

Pig Iron.

Pig iron prices continue to climb in what resembles a runaway market and the composite price this week stands at \$22.657, as compared with \$20.953 a ton, the past week.

The largest order was that of the

American Radiator Company, which bought some 70,000 tons of foundry of the Rogers-Brown Iron Company.

Some are now asking the question as to when imported iron will make its appearance and the answer is not until the domestic market has advanced to beyond \$26 or \$27 a ton and even then it is doubtful if foreign iron could be bought in sufficient volume to appreciably affect this market.

Dual Market in Steel Begins to Disappear as the Leading Interest Starts Withdrawal.

Advance Estimates of Steel Production for April Show a Slight Falling Off Compared with the Preceding Month.

EVIDENCES are multiplying to the effect that the dual steel market, established a week ago with the leading interest quoting the lower limit of the range and the independents the higher, is beginning to disappear inasmuch as the corporation is getting sold up and some of its subsidiaries have withdrawn from the market or are about to do so.

For instance, the American Sheet & Tin Plate Company, has been quoting sheets at from \$5 to \$8 a ton lower than the independents and has thus maintained the market at that level, but late in the week it found itself booked to capacity for three months ahead and withdrew from the market entirely for all grades of sheets, except 3 guages of blue annealed.

Bars plates and shapes are still quoted by the corporation at 1.50 cents Pittsburgh, but it is understood that sales are limited to "regular customers," and that this term is not interpreted to include all consumers is proved by the fact that independent mills are receiving orders at the higher prices they are asking.

The fact is that the independents are receiving about all the business they can take on and many are out of the market entirely, but when all the subsidiaries of the Corpora-

One important development of the week was the starting of the long contemplated expansion of the Clariton by-product coke plant of the United States Steel Corporation at a cost of approximately \$30,000,000 in order to increase its supply of coke by the use of coal from West Virginia and make it independent of the Fayette field.

This will double the capacity of the largest by-product coke plant in the world.

tion have been booked to capacity and this stabilizing influence removed, there is every indication that the steel market will enter a most unsettled state.

Some makers are quoting sheet bars at \$31 Youngstown or Pittsburgh, but this price is purely nominal as sales are being made at from \$33 to \$35.

There is a pronounced scarcity for semi-finished material.

It is reported from Youngstown that five of the eight sheet mills are refusing further business as they are booked to capacity for the next six weeks.

Wire and wire products mills are taking only the most attractive business and some inquiries are being turned down even than.

On account of the stabilizing influence of the leading interest, the composite price of finished steel products is but little higher this week, and stands at 2.1233 cents per pound, as compared with 2.122 cents a pound last week.

The coal strike has passed its fourth week with but little change.

Some of the independents are affected by a slight stringency in fuel, and are likely to be affected much more in the near future, but the leading interest seems to be fairly well off in the way of supplies and receipts.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

| | |
|-------------------------------------|-------|
| Chicago Foundry... | 22 00 |
| Southern Fdy. No. 2, 23 16 to 23 66 | |
| Lake Sup. Charcoal 28 00 | |
| Malleable | 22 00 |

FIRST QUALITY BRIGHT TIN PLATES.

| | Per Box |
|---------------------|---------|
| IC 14x20 112 sheets | \$10 00 |
| IX 14x20..... | 11 25 |
| IXX 14x20..... | 12 60 |
| IXXX 14x20..... | 13 90 |
| IXXXX 14x20..... | 15 25 |
| IC 20x28..... | 20 00 |
| IX 20x28..... | 22 50 |
| IXX 20x28..... | 25 20 |
| IXXX 20x28..... | 27 80 |
| IXXXX 20x28..... | 30 50 |

COKE PLATES.

| | |
|--------------------|----------------|
| Cokes, 180 lbs.... | 20x28 \$11 30 |
| Cokes, 200 lbs.... | 20x28 12 00 |
| Cokes, 214 lbs.... | IC 20x28 13 35 |
| Cokes, 270 lbs.... | IX 20x28 14 10 |

BLUE ANNEALED SHEETS.

| | |
|------------|---------------------|
| Base | per 100 lbs. \$3 33 |
|------------|---------------------|

ONE PASS COLD ROLLED BLACK.

| | |
|----------------|---------------------|
| No. 18-20..... | per 100 lbs. \$4 10 |
| No. 22-24..... | per 100 lbs. 4 15 |
| No. 26..... | per 100 lbs. 4 20 |
| No. 27..... | per 100 lbs. 4 25 |
| No. 28..... | per 100 lbs. 4 30 |
| No. 29..... | per 100 lbs. 4 40 |

GALVANIZED.

| | |
|----------------|---------------------|
| No. 16..... | per 100 lbs. \$4 55 |
| No. 18-20..... | per 100 lbs. 4 70 |
| No. 22-24..... | per 100 lbs. 4 85 |
| No. 26..... | per 100 lbs. 5 00 |
| No. 27..... | per 100 lbs. 5 15 |
| No. 28..... | per 100 lbs. 5 30 |
| No. 30..... | per 100 lbs. 5 80 |

BAR SOLDER.

| | |
|----------------|----------------------|
| Warranted. | |
| 30-50 | per 100 lbs. \$21 50 |
| Commercial. | |
| 45-55 | per 100 lbs. 20 00 |
| Plumbers | per 100 lbs. 18 75 |

ZINC.

| | |
|----------------|------|
| Em Slabs | 5 50 |
|----------------|------|

SHEET ZINC.

| | |
|--------------------------|-------|
| Cask lots, stock..... | 8 3/4 |
| Less than cask lots..... | 9c |

COPPER.

| | |
|-----------------------------|--------|
| Copper Sheet, mill base.... | \$0 19 |
|-----------------------------|--------|

LEAD.

| | |
|--------------------|--------|
| American Pig | \$5 75 |
| Bar | 6 60 |

Sheet.

| | |
|------------------|-------------------|
| Full coils | per 100 lbs. 8 00 |
| Cut coils | per 100 lbs. 8 25 |

TIN.

| | |
|---------------|--------------------|
| Pig tin | per 100 lbs. 34 10 |
| Bar tin | per 100 lbs. 36 10 |

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

| | |
|----------------|-----|
| Coopers'. | |
| Barton's | Net |
| White's | Net |

AMMUNITION.

| | |
|------------------------------------|-----|
| Shells, Loaded, Peters. | |
| Loaded with Black Powder 18% | |
| Loaded with Smokeless Powder | 18% |

| | |
|--------------------|---------|
| Winchester. | |
| Smokeless Repeater | |
| Grade | 20 & 4% |
| Smokeless Leader | |
| Grade | 20 & 4% |
| Black Powder | 20 & 4% |

| | |
|------------------|---------|
| U. M. C. | |
| Nitro Club | 20 & 4% |
| Arrow | 20 & 4% |
| New Club | 20 & 4% |

| | |
|---------------------------------|--|
| Gun Wads—per 1000. | |
| Winchester 7- 8 gauge 10&7 1/4% | |
| " 9-10 gauge 10&7 1/4% | |
| " 11-28 gauge 10&7 1/4% | |

ASBESTOS.

| | |
|---------------------------------------------|-----------------|
| Paper up to 1/16..... | 6c per lb. |
| Rollboard | 6 1/2 c per lb. |
| Millboard 3/32 to 1/4..... | 6c per lb. |
| Corrugated Paper (250 sq. ft. to roll)..... | \$6.00 per roll |

AUGERS.

| | |
|-------------------------------------------------|------------------|
| Boring Machine 40 @ 40&10% | |
| Carpenter's Nut | 50% |
| Hollow. | |
| Bonney's..... | per doz. \$30 00 |
| Post Hole. | |
| Iwan's Post Hole and Well | 30 and 5% |
| Vaughan's, 4 to 8 in., without handles per doz. | \$14 00 |

AWLS.

| | |
|-----------------------------|-----------------|
| Brad. | |
| No. 3 Handled..... | per doz. \$9 60 |
| No. 1050 Handled | 1 40 |
| Patent asst'd, 1 to 4 | 35 |

| | |
|--------------|-----------------|
| Harness. | |
| Common | per doz. \$1 05 |
| Patent | 1 00 |

| | |
|------------------|------|
| Peg. | |
| Shouldered | 1 80 |
| Patented | 75 |

Scratch.

| | |
|----------------------------------------|-----------------|
| No. 18, socket | |
| Handled | per doz. \$2 50 |
| No. 344 Goodell-Pratt, list less | 35-40% |
| No. 7 Stanley..... | per doz. \$2 25 |

AXES.

| | |
|----------------------------------------------------------------|---------|
| First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz. | \$11 00 |
|----------------------------------------------------------------|---------|

| | |
|----------------------------------------------------|-------|
| Good Quality, Single Bitted, same weight, per doz. | 10 00 |
|----------------------------------------------------|-------|

BALANCES, SPRING.

| | |
|-------------------|---------------|
| Universal. | |
| Sight Spring..... | List less 25% |
| Straight | List less 25% |

BAR, WRECKING.

| | |
|----------------------|--------|
| V. & B. No. 12..... | \$0 45 |
| V. & B. No. 24..... | 0 75 |
| V. & B. No. 32..... | 0 80 |
| V. & B. No. 30..... | 0 85 |
| V. & B. No. 330..... | 0 90 |

BEVELS, TREE.

| | |
|-------------------------------------------|------|
| Stanley's Rosewood handle, new list | Nets |
| Stanley Iron handle..... | Nets |

BINDING CLOTH.

| | |
|---------------------|-----|
| Zinc | 55% |
| Brass | 40% |
| Brass, plated | 60% |

BITS.

| | |
|------------------------|----------|
| Auger. | |
| Jennings Pattern..... | Net |
| Ford Car..... | 25% off |
| Ford's Ship..... | 25% off |
| Irwin | 35% |
| Russell Jennings..... | less 10% |
| Clark's Expansive..... | 35 1/4% |
| Center | 10% |

Countersink.

| | |
|--------------------------|------|
| American Snailhead | 1 75 |
| " Rose | 2 00 |
| " Flat | 1 40 |

Dowel.

| | |
|------------------------|----------|
| Russell Jennings | plus 20% |
|------------------------|----------|

Gimlet.

| | |
|-----------------------------|---------------------|
| Standard Double Cut Gross | \$3 40 |
| Nail Metal Single Cut | Gross \$4 00—\$5 00 |

Reamer.

| | |
|-----------------------|-------------|
| Standard Square..... | Dox. \$2 50 |
| American Octagon..... | 2 50 |

Screw Driver.

| | |
|---------------------|----------|
| No. 1 Common..... | Each 13c |
| No. 26 Stanley..... | Each 70c |

BLADES, SAW.

| | |
|---------------|-----------------------|
| Wood. | |
| Atkins 30-in. | |
| Noa. | \$ 40 26 |
| " | \$3 90 \$3 45 \$5 40 |
| Diston 30-in. | |
| Noa. | \$ 66 26 |
| " | \$3 45 \$10 05 \$3 45 |

BLOCKS.

| | |
|--------------|-----|
| Wooden | 20% |
| Patent | 20% |

BLOW TORCHES (See Firepots).

BOARDS.

| | |
|-------------------------|----------|
| Stove. | Per doz. |
| 25x25, wood lined..... | \$14 45 |
| 25x25, " | 18 95 |
| 30x30, " | 19 00 |
| 25x25, paper lined..... | 3 15 |
| 25x25, " | 3 10 |
| 30x30, " | 10 80 |

Wash.

| | |
|--------------------------------------|-----------------|
| No. 760, Banner Globe (single) | per doz. \$5 25 |
| No. 652, Banner Globe (single) | per doz. 6 75 |
| No. 801, Brass King, per doz. | 3 25 |
| No. 860, Single—Plain Pump | 6 25 |

BOLTS.

| | |
|---------------------------------------------------------------|--------------|
| Carriage, Machine, etc. | |
| Carriage, cut thread, 3/8 and sizes smaller and shorter | 60 & 5% |
| Carriage sizes, larger and longer than 3/8x5..... | 50 & 10% |
| Machine, 3/4x4 and sizes smaller and shorter..... | 60 & 10 & 5% |
| Machine, sizes larger and longer than 3/4x4..... | 60 & 5% |
| Stove | 80% |

Mortise, Door.

| | |
|-------------------------|----|
| Gem, iron | 5% |
| Gem, bronze plated..... | 5% |

Barrel.

| | |
|------------------------|-----|
| Cast | Net |
| Wrought | " |
| Wrought, bronzed | " |

Flush.

| | |
|---------------|-----|
| Wrought | Net |
|---------------|-----|

Spring.

| | |
|----------------------|---|
| Wrought | " |
| Wrought, heavy | " |

Square.

| | |
|---------------|---|
| Wrought | " |
|---------------|---|

BOXES.

| | |
|-------------------|-----------------|
| Mail, No. 2 | 4 10 |
| Per doz. \$18 00 | \$23 00 \$29 00 |

Cast Iron.

| | |
|---------------|--------|
| Per doz. | \$9 50 |
|---------------|--------|

Mitre.

| | |
|---------------------|------------------|
| Stanley's..... | Net Prices |
| Stearns, No. 2..... | per doz. \$48 00 |

BRACES, RATCHET.

| | |
|----------------------------|--------|
| Goodell-Pratt No. 408..... | \$4 60 |
| " " No. 410..... | 4 80 |
| " " No. 412..... | 5 00 |
| V. & B. No. 444 8 in..... | 4 85 |
| V. & B. No. 322 8 in..... | 4 30 |
| V. & B. No. 222 8 in..... | 4 00 |
| V. & B. No. 111 8 in..... | 3 50 |
| V. & B. No. 11 8 in..... | 3 05 |

BURRS, RIVETING.

| | |
|------------------------|-----|
| Copper Burrs only..... | 50% |
|------------------------|-----|

Tinners' Iron Burrs only.....

BUTTS.

| | |
|-----------------------------------------------------------------------|------------------------|
| Steel, antique copper or dull brass finish—case lots—3 1/2x3 1/4..... | per dozen pairs \$2 75 |
| 4x4..... | 3 80 |

| | |
|------------------------------------------------|---------------------|
| Heavy Bevel steel inside sets, case lots—..... | per dozen sets 7 50 |
|------------------------------------------------|---------------------|

| | |
|---------------------------------------------|------|
| Steel bit keyed front door sets, each | 1 80 |
|---------------------------------------------|------|

| | |
|----------------------------------------------------|------|
| Wrought brass bit keyed front door sets, each..... | 3 25 |
|----------------------------------------------------|------|

| | |
|--------------------------------------|------|
| Cylinder front door sets, each | 7 00 |
|--------------------------------------|------|

CALIPERS.

| | |
|-------------------------|-----|
| Double | Net |
| Inside and Outside..... | " |
| Wing | " |

CARRIERS.

| | |
|-----------------------|------------|
| Hay. | |
| Diamond, Regular..... | each, nets |
| Diamond, Sling | " |

CASTERS.

| | |
|----------------------------|----------|
| Standard—Ball Bearing..... | 50 & 10% |
| Bed | 40% |

Common Plate.

| | |
|-------------------------------------------|-----|
| Brass Wheel | 15% |
| Iron and porcelain wheels, new list | 50% |
| Philadelphia Plate, new list | 50% |
| Martin's | 40% |

CATCHERS, GRASS.

| | |
|---------------|------------------|
| No. 1605..... | per doz. \$12 25 |
| No. 1668..... | 14 61 |

CEMENT, FURNACE.

| | |
|--------------------------------|--------|
| American Seal, 5 lb. cans, net | \$0 45 |
| " 10 lb. cans, " | 80 |
| " 25 lb. cans, " | 1 87 |
| Asbestos, 5 lb. cans..... | 45 |
| Pecora, 5 lb. cans..... | 45 |
| " 10 lb. cans..... | 50 |
| " 25 lb. cans..... | 1 37 |

CHAINS.

| | |
|-------------------------|--------------------|
| Breast Chains. | |
| With Slide..... | doz. pairs, \$5 50 |
| Without Slide..... | 5 95 |
| Doubleslack | 3 25 |
| With Covert Snaps | 6 33 |

Picture Chains.

| | |
|-----------------------------|------|
| Light brass, 3 ft. per doz. | 1 25 |
| Heavy brass, 3 ft. | 1 75 |

Sash Chain.

| | |
|------------|--|
| (Morton's) | |
|------------|--|

Steel, per 100 ft.

| | |
|---------|--------|
| 0 | \$2 50 |
| 2 | 2 10 |
| 1 | 3 60 |

Champion Metal.

| | |
|----------|------|
| 0R | 5 40 |
| 2R | 5 60 |
| 1R | 7 75 |

Champion Metal—Extra Heavy.

| | |
|----------|--------|
| 1H | \$5 50 |
|----------|--------|

Cable Sash Chains.

| | |
|------------|-------------------|
| Steel..... | List Net Plus 15% |
|------------|-------------------|

CHALK, CARPENTERS'.

| | |
|-------------|-----------------|
| Blue | per gro. \$2 00 |
| Red | 2 00 |
| White | 1 50 |

Common White School Crayon

| | |
|--|------|
| | 0 30 |
|--|------|

CHIMNEY TOPS.

| | |
|--------------|----------------|
| In bags..... | per bag \$1 30 |
|--------------|----------------|

CHECKS, DOOR.

| | |
|--------------|----------|
| Corbin | Net list |
|--------------|----------|

| | |
|---------------|----------|
| Russwin | Net list |
|---------------|----------|

CHISELS.

| | |
|-----------------------------|--------|
| Cold. | |
| Good quality, 3/4 in., each | \$0 44 |
| " 1/2 in., " | 0 23 |

Diamond Point.

| | |
|-----------------------------|------|
| V. & B. No. 15, 3/4 in..... | 0 23 |
|-----------------------------|------|

| | |
|-----------------------------|------|
| V. & B. No. 15, 1/2 in..... | 0 43 |
|-----------------------------|------|